

**COVER SHEET**  
**JUNE 2008**

**TITLE OF ENVIRONMENTAL  
REVIEW:**

Final Environmental Assessment of a NOAA's National Marine Fisheries Service Action To Issue Permit 1554 Under Section 10(a)(1)(B) of the Endangered Species Act for Recreational Fisheries on Unlisted Species in the Upper Columbia River and its Tributaries

**EVOLUTIONARILY  
SIGNIFICANT UNITS (ESU) AND  
DISTINCT POPULATION  
SEGMENT (DPS) AFFECTED:**

Upper Columbia River (UCR) Spring-run Chinook Salmon (*Oncorhynchus tshawytscha*), Snake River Fall Chinook Salmon (*O. tshawytscha*), UCR Steelhead (*O. mykiss*), and Middle Columbia River Steelhead (*O. mykiss*)

**RESPONSIBLE AGENCY AND  
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**LEGAL MANDATE:**

Endangered Species Act (ESA) of 1973, as amended and implemented 50 CRF Part 223

**LOCATION OF PROPOSED  
ACTIVITIES:**

Upper and Middle Columbia River Basin in the State of Washington

**ACTION CONSIDERED:**

Issuance of ESA Permit 1554 to the Washington Department of Fish and Wildlife

**RELATED DOCUMENT:**

National Marine Fisheries Service Endangered Species Act Section 7 Consultation and Magnuson-Stevens Act Essential Fish Habitat Consultation: Issuance of ESA Section 10(a)(1)(B) Permit 1554 to the Washington Department of Fish and Wildlife for the Implementation of Recreational Fisheries for Unlisted Species in the Middle and Upper Columbia River and its Tributaries

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## PREFACE

Prior to the availability of a draft EA for public review, the receipt of the application was noticed and a comment period was opened (November 25, 2005, 70 FR 71087). No comments were received on the application.

The first of two public comment periods on the draft EA was opened on September 12, 2007 (72 FR 52085). During the 2007 public comment period, 187 comments were received. Several of those included duplicate submissions from the same individuals. In summary:

- One commenter expressed concern over the potential impacts of WDFW managing fisheries on introduced species and the potential adverse impacts on listed species from those management strategies.
  - *NMFS Response:* The issues associated with the impacts of fisheries on listed species are specifically dealt with in this analysis.
- Two individuals were not supportive of the issuance of the permit; one commenter had concerns specific to the newly proposed Entiat River fishery; the other commenter, an individual from outside the area, was in general disagreement with the permit issuance.
  - *NMFS Response:* The specific concerns regarding the proposed Entiat River fishery are addressed in the final draft of the EA.
- One individual submitted a package of documents on an economic analysis of the impacts of the construction and operation of Rocky Reach Dam to the city of Entiat. The accompanying letter was in support of opening the fishery in the Entiat River.
- A petition signed by 48 individuals in favor of fishing in the Entiat River was received.
- One hundred thirty-six copies of a letter in support of any and all fisheries in the Entiat River were received.
- Several handwritten notes, all in favor of issuing the permit, were received.

On May 9, 2008 (73 FR 26374), the draft EA was again made available for public comment to address a proposed change in the permit's duration from 5 years to 10 years. Changing the length of time for which the permit would be issued did not change the analysis, for two general reasons: (1) the proposed action is similar to one previously permitted over a period of time greater than five years, with similar impacts, as described in the current EA; (2) while impacts are expected to remain similar to those evaluated, potential changes in the operation of mainstem hydropower projects and implementation of habitat- and hatchery- related actions associated with recovery planning, as well as variation in ocean and climate conditions, combine to justify NMFS' recognition that management of the proposed fisheries should depend on rigorous on-going monitoring and adaptive management. Therefore, while the proposed action's environmental effects are expected to remain consistent with recently observed effects of similar fisheries, the possibility that some changes may occur is no less likely over a 5-year time period than over a 10-year period. NMFS believes that these fisheries pose a low risk of deviating from the assessed impacts over time. This is based on the information collected during the

implementation of these fisheries from 2001 through 2007 under the expired permit 1248. Permit 1554, as proposed, will maintain or strengthen monitoring and compliance enforcement activities and, therefore, the level of confidence in the effects analysis and the impacts, whether over a 5-year or 10-year period. Additionally, permit 1554 will include an annual reporting requirement and identify an annual renewal process. If impacts exceed the authorized take or new information on the impacts of the activities arises, NMFS may re-initiate consultation.

Because there would be no anticipated change in impacts from those analyzed in the first draft EA reflecting a 5-year permit term, this final EA does not contain any additional information in any section of the document, with the exception of Section 1.2, Background, which now reflects the 10-year permit term. During the 2008 comment period, no comments were received that required changes to the draft EA.

## TABLE OF CONTENTS

	Page
Preface.....	P-1
List of Tables .....	iii
List of Figures .....	iii
1 Purpose and Need .....	1
1.1 Introduction .....	1
1.2 Background .....	2
1.3 Description of Proposed Action .....	3
1.4 Purpose of and Need for the Proposed Action .....	3
1.5 Action Area .....	4
1.5.1 Wenatchee Subbasin .....	4
1.5.2 Entiat Subbasin .....	6
1.5.3 Methow Subbasin.....	6
1.5.4 Okanogan Subbasin .....	6
1.6 Scope .....	6
1.7 Relationship to Other Plans and Policies .....	7
2 Alternatives .....	8
2.1 Alternative 1 – Do Not Issue the Permit (No Action).....	8
2.2 Alternative 2 – Issue Permit with Conditions (Proposed Action).....	8
2.2.1 Methow Basin Catch-and-Release Trout Fishery .....	8
2.2.2 Summer/Fall Chinook Salmon Fishery Above Priest Rapids Dam .....	8
2.2.3 Icicle Creek Spring Chinook Salmon Fishery .....	9
2.2.4 Entiat River Spring Chinook Salmon .....	9
2.2.5 Lake Wenatchee Sockeye Salmon Fishery .....	9
2.2.6 Hanford Reach Summer Chinook Salmon Fishery.....	10
2.2.7 Hanford Reach Fall Chinook Salmon Fishery .....	10
2.2.8 Non-anadromous Recreational Fishery Below Priest Rapids Dam .....	10
2.2.9 Non-anadromous Recreational Fishery Above Priest Rapids Dam.....	11
2.2.10 Tributary Whitefish Fishery.....	11
2.2.11 Permit Number 1554 Terms and Conditions .....	11
2.2.12 Incidental Take.....	12
2.3 Alternatives Considered, But Not Analyzed in Detail .....	15
3 Affected Environment.....	15
3.1 Riparian Habitat .....	15
3.2 Water Quality .....	15
3.3 ESA-Listed Anadromous Fish Species .....	16
3.3.1 Upper Columbia River Spring Chinook Salmon .....	16
3.3.2 Upper Columbia Steelhead .....	17
3.3.3 Snake River Fall Chinook Salmon.....	19
3.3.4 Middle Columbia River Steelhead.....	20
3.4 Other ESA-Listed Fish Species.....	21
3.5 Non-listed Fish Species.....	22
3.6 Terrestrial Organisms .....	23

3.7	Socioeconomic Environment .....	24
3.8	Environmental Justice .....	25
4	Environmental Consequences .....	26
4.1	Alternative 1 – Do Not Issue the Permit (No Action).....	26
4.1.1	Effects on Riparian Habitat.....	26
4.1.2	Effects on Water Quality .....	26
4.1.3	Effects on ESA-Listed Anadromous Fish Species.....	27
4.1.4	Effects on Other ESA-Listed Fish Species .....	28
4.1.5	Effects on Non-listed Fish Species .....	29
4.1.6	Effects on Terrestrial Organisms .....	30
4.1.7	Effects on Socioeconomic Environment.....	30
4.1.8	Effects on Environmental Justice.....	31
4.2	Alternative 2 – Issue Permit with Conditions (Proposed Action).....	32
4.2.1	Effects on Riparian Habitat.....	32
4.2.2	Effects on Water Quality .....	32
4.2.3	Effects on ESA-Listed Anadromous Fish Species.....	33
4.2.4	Effects on Other ESA-Listed Fish Species .....	35
4.2.5	Effects on Non-Listed Fish Species.....	36
4.2.6	Effects on Terrestrial Organisms .....	36
4.2.7	Effects on Socioeconomic Environment.....	37
4.2.8	Effects on Environmental Justice.....	38
4.3	Cumulative Effects.....	39
5	Agencies Consulted .....	39
6	References.....	40
6.1	Federal Register Notices .....	40
6.2	Literature Cited .....	41
7	Finding of No Significant Impact .....	45
7.1	Responses to Criteria.....	45
7.2	List of EA and FONSI Reviewers.....	48
7.3	References .....	49
7.4	Determination.....	49

**LIST OF TABLES**

Page

Table 1. Projected take of ESA listed species during recreational fisheries in the UCR basin (WDFW 2005).....	13
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**LIST OF FIGURES**

Page

Figure 1. Map of action area, including middle and upper Columbia River from McNary Dam upstream to Chief Joseph Dam and tributary basins in between. ....	5
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## 1 PURPOSE AND NEED

This section provides an introduction to this document, a summary of the background, a description of the proposed action, states the purpose and need for the action proposed, defines the action area, the scope of the analysis, and the relationship of the proposed action to other plans and policies.

### 1.1 Introduction

NOAA's National Marine Fisheries Service (NMFS), the lead agency responsible for administering the Endangered Species Act (ESA) as it relates to listed salmon and steelhead, is evaluating under the National Environmental Policy Act (NEPA) the decision to issue incidental take permit number 1554, based on an application received from the Washington Department of Fish and Wildlife (WDFW).

Permit 1554 may affect four ESA-listed species. The Upper Columbia River (UCR) spring Chinook salmon (*Oncorhynchus tshawytscha*) Evolutionarily Significant Unit (ESU) (Waples et al. 1991) was listed as an endangered species on March 24, 1999 (64 FR 14308) and reaffirmed as endangered on June 28, 2005 (70 FR 37160). The Snake River Fall Chinook Salmon (*O. tshawytscha*) ESU was listed as a threatened species on April 22, 1992 (57 FR 14653) and reaffirmed as threatened on June 28, 2005 (70 FR 37160). The UCR Steelhead (*O. mykiss*) Distinct Population Segment (DPS)<sup>1</sup> (71 FR 834) was listed as an endangered species on August 18, 1997 (62 FR 43937) and upgraded to threatened status on January 5, 2006 (71 FR 834). On June 13, 2007, NMFS' Hatchery Listing Policy was set aside as contrary to the ESA by the U.S. District Court. As a consequence, the 2006 listing (which depended in part on the Hatchery Listing Policy) was invalidated, and therefore this DPS has reverted to endangered status (*Trout Unlimited v. Lohn*, No. 06-0483 (W.D. Wash., filed June 13, 2007)). The MCR Steelhead (*O. mykiss*) DPS was listed as a threatened species on March 25, 1999 (64 FR 14517), and reaffirmed as threatened on January 5, 2006 (71 FR 834).

Under section 10(a)(1)(B) of the ESA, non-Federal entities may apply for permits from NMFS to take ESA-listed species if such taking is incidental to, and not the purpose of, carrying out an otherwise lawful activity. Under the ESA, the permit shall be issued if NMFS finds: (1) the taking will be incidental; (2) the applicant will, to the maximum extent practicable, minimize and mitigate the impacts of such taking; (3) the applicant will ensure that adequate funding for the conservation plan will be provided; (4) the taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild; and (5) any other measures that the Secretary may require as being necessary or appropriate will be met.

The purpose of this Environmental Assessment (EA), completed as part of the NEPA analysis, is to evaluate the potential environmental effects as a consequence of the NMFS

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<sup>1</sup> An ESU species of Pacific salmon and a DPS of steelhead are considered to be "species" as the word is defined in section 3 of the ESA.



action of issuing permit number 1554 to the WDFW for the incidental take of ESA-listed anadromous fish. NMFS must evaluate how the pending action may affect the natural and physical environment and the relationship of people with that environment. NMFS is also required to review compliance of ESA actions with other applicable laws and regulations. The NEPA analysis provides an opportunity to consider, for example, how the action may affect the conservation of non-listed species, socioeconomic objectives that seek to balance conservation with the wise use of affected resources, and other legal and policy mandates.

## **1.2 Background**

On September 12, 2005, the WDFW submitted an application to NMFS for an ESA section 10(a)(1)(B) permit for incidental take of ESA-listed anadromous fish species associated with recreational fishery programs in the upper Columbia River and its tributaries for a five year period (the application was originally submitted in 2004, then re-submitted after changes requested by NMFS were made to it). NMFS proposes to issue permit number 1554 for a period of ten years. The majority of the fisheries that are subject to this permit are ongoing activities, although the application from WDFW included proposals for some new fisheries. The ongoing fisheries were last covered by permit number 1248, which expired on December 31, 2004, and a *U.S. v. Oregon* Interim Management Agreement, which expired on December 31, 2007. Permit 1248 was modified or reauthorized annually to reflect changes in fishery regulations and inter-annual variation in anadromous fish adult returns during the five years that the permit was in effect.

The application submitted by WDFW provides a description of the proposed fisheries and an analysis of the impacts of the activities on listed species (WDFW 2005). The proposed fisheries would target non-listed anadromous salmon and steelhead and resident game fish species. No fisheries that would target listed species are proposed in the application. Implementation of the proposed fisheries would allow fishing for recreational purposes and would provide economic opportunities for local communities through the sale of licenses and equipment, and the conduct of other business and services related to recreational fisheries.

Implementation of recreational fisheries in these waters is consistent with the Policy for Conserving Species Listed or Proposed for Listing Under the Endangered Species Act While Providing and Enhancing Recreational Fisheries Opportunities (61 FR 27978), which was jointly issued by NMFS and the U.S. Fish and Wildlife Service (USFWS), on June 3, 1996. This policy was issued pursuant to Presidential Executive Order 12962, issued on June 7, 1995. That order requires Federal agencies, to the extent permitted by law, and where practicable and in cooperation with States and Tribes, to improve the quality, function, sustainable productivity, and distribution of aquatic resources for increased recreational fishing opportunity. Among other actions, the order requires all Federal agencies to aggressively work to promote compatibility and reduce conflict between administration of the ESA and recreational fisheries.

The receipt of the permit application from WDFW and a public comment period was published in the Federal Register on November 25, 2005 (70 FR 71087). A draft EA was opened for public comment on September 12, 2007, (72 FR 52085) for 30 days. In addition to the notice published in the Federal Register, several area politicians, land owners, and other individuals that had previously indicated interest in this project were notified of the public comment period by email sent on September 14, 2007.

### **1.3 Description of Proposed Action**

NMFS proposes to issue ESA section 10(a)(1)(B) incidental take permit number 1554 to WDFW as authorization for the incidental take of listed species that would occur during recreational fisheries activities targeting unlisted species. The proposed fisheries are described below.

The permit application submitted by the WDFW proposed to conduct 12 distinct fisheries in the Upper Columbia River and its tributaries. Ten of these fisheries are considered for inclusion in permit 1554, the remaining two fisheries will be considered in a separate ESA consultation because of their relationship to the *U.S. v. Oregon* court case and lower Columbia River fisheries. The 10 fisheries that would be included in permit 1554 are: (1) Methow River Catch-and-Release Trout Fishery, (2) the Summer/Fall Chinook Salmon Fishery above Priest Rapids Dam, (3) the Leavenworth National Fish Hatchery (NFH) Spring Chinook Salmon Fishery, (4) the Entiat NFH Spring Chinook Salmon Fishery, (5) the Lake Wenatchee Sockeye Salmon Fishery, (6) the Hanford Reach Summer Chinook Salmon Fishery, (7) the Hanford Reach Fall Chinook Salmon Fishery, (8) the Non-Anadromous Recreational Fishery below Priest Rapids Dam, (9) the Non-Anadromous Recreational Fishery above Priest Rapids Dam, and (10) the Whitefish Fishery. Details about the proposed fisheries are in WDFW's permit application, which is incorporated into this EA by reference (WDFW 2005).

The scope of the action considered here includes only the authorization of incidental take in recreational fisheries as conducted by the WDFW, the agency responsible for fishery management within the State of Washington.

The proposed fisheries are expected to primarily affect UCR spring Chinook salmon and UCR steelhead, which are both listed as endangered under the ESA. In addition, Snake River fall Chinook salmon and MCR steelhead, both listed as threatened under the ESA, may be present in some of the waters that are affected by the permitted activities.

### **1.4 Purpose of and Need for the Proposed Action**

The purpose of the proposed action is to allow the conduct of recreational fisheries consistent with the following: (1) the Policy for Conserving Species Listed or Proposed for Listing Under the Endangered Species Act While Providing and Enhancing Recreational Fisheries Opportunities (61 FR 27978), (2) the ESA, and (3) State of Washington guidelines for providing sustainable fishing opportunities for the citizens of the state. Before a permit is issued, the potential impacts of the fishing activities must be evaluated and conditions adopted as necessary and advisable to provide for the

conservation of listed species. The operation of the proposed recreational fisheries must be consistent with, and should take place within, the greater context of regional and sub-basin salmon recovery plans. The WDFW proposal includes monitoring guidelines designed to assess the impacts of the fisheries and to ensure that the fisheries do not appreciably reduce the likelihood of the survival and recovery of ESA-listed salmon and steelhead.

The need for the proposed action is to manage and minimize risks to natural populations while allowing sustainable recreational fisheries consistent with state and Federal statutes and policies and to apply scientific fishery management protocols as part of the overall conservation of listed species. In addition to controlling the risk to listed salmon and steelhead, the fishery management program is expected ultimately to contribute to local and regional economies and to the quality of human life in the region by providing sport and recreational fishery opportunities.

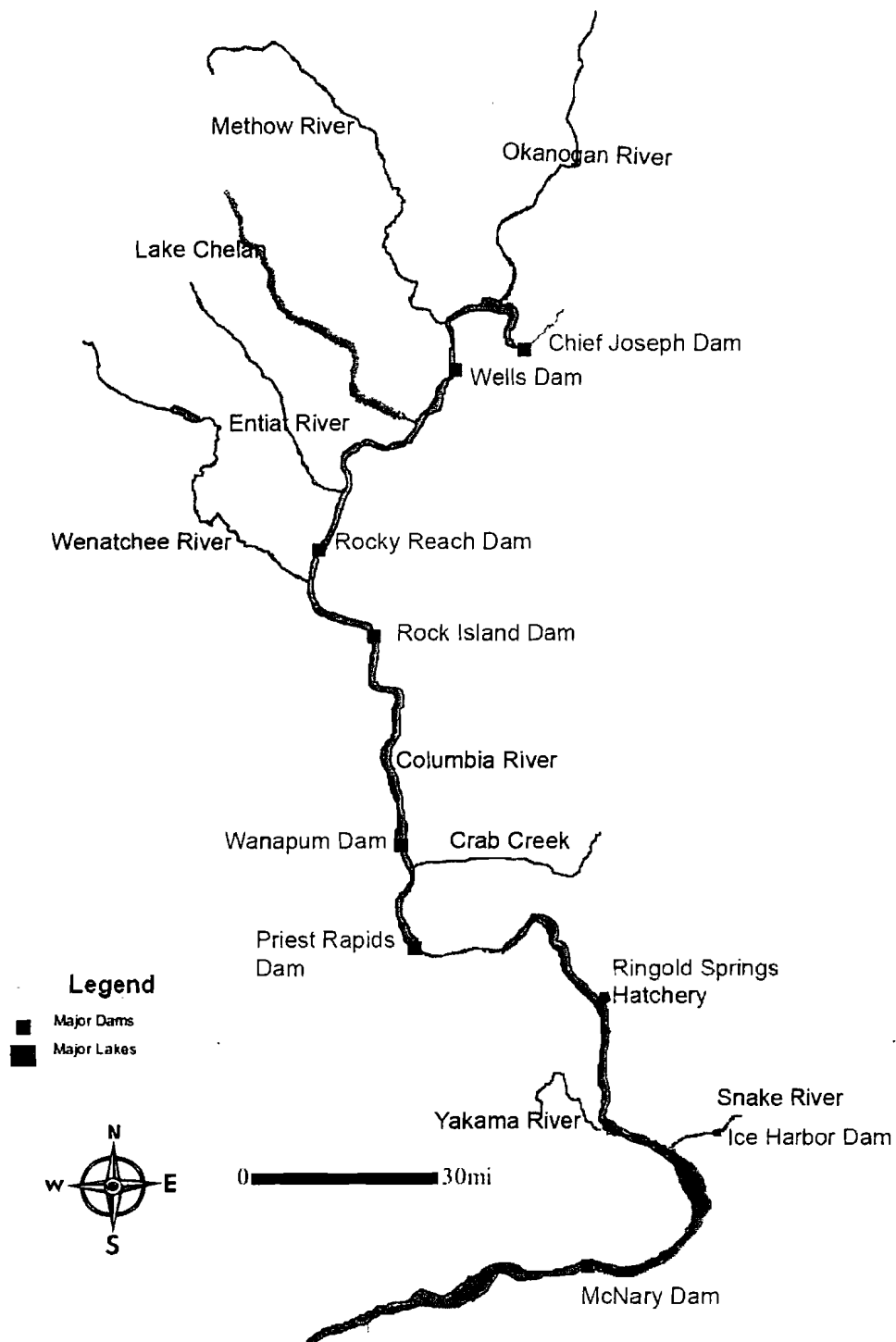
## **1.5 Action Area**

The action area for the proposed activities is the mainstem Columbia River and areas within the upper Columbia River basin (Figure 1). The Upper Columbia Basin consists of six major subbasins, smaller watersheds, and part of the mainstem Columbia River. The major subbasins are the Crab, Wenatchee, Entiat, Lake Chelan, Methow, and Okanogan. Specifically, the action area includes the mainstem Upper Columbia River from McNary Dam upstream to Chief Joseph Dam, as well as water bodies accessible to anadromous salmonids in the Wenatchee subbasin (Chelan County), the Entiat subbasin (Chelan County), the Methow subbasin (Okanogan County), and the Okanogan subbasin (Okanogan County). One proposed fishery would take place outside of these subbasins. Major tributaries in the action area include: the Methow River, the Twisp River, the Chewuch River, the Entiat River, the Okanogan River, the Wenatchee River, and Icicle Creek.

The mainstem portion of the Columbia River included in the action area is defined by a series of seven dams. The U.S. Army Corps of Engineers operates McNary and Chief Joseph Dams, the Douglas County Public Utility District (PUD) operates Wells Dam, the Grant County PUD operates Priest Rapids and Wanapum Dams, and the Chelan County PUD operates Rock Island and Rocky Reach Dams. McNary Dam, the most downstream of the projects, is located at river mile 292 on the Columbia River and Chief Joseph Dam, the most upstream of the projects, is located at river mile 545.1 on the Columbia River.

### **1.5.1 Wenatchee Subbasin**

The Wenatchee subbasin is located entirely within Chelan County and is approximately 854,000 acres in size. The Wenatchee River joins the Columbia River at river mile 470. A majority of the subbasin (81 percent) is in Federal (primarily U.S. Forest Service (USFS) and state ownership; the remainder is in private ownership (Wenatchee Subbasin Plan 2004). The subbasin includes the Alpine Lakes and Glacier Peak wilderness areas. Annual precipitation varies greatly in the subbasin, from nearly 150 inches at points along the Cascade crest to less than nine inches in the City of Wenatchee (Wenatchee



**Figure 1. Map of action area, including middle and upper Columbia River from McNary Dam upstream to Chief Joseph Dam and tributary basins in between.**

Subbasin Plan 2004). Water bodies in the Wenatchee Subbasin affected by the proposed action include the Wenatchee River, Icicle Creek, and Lake Wenatchee.

### **1.5.2 Entiat Subbasin**

The Entiat subbasin is located entirely within Chelan County and is approximately 298,000 acres in size. The Entiat River enters the Columbia River at Columbia river mile 484. Ownership within the subbasin is primarily public; the USFS manages the largest portion of the subbasin (approximately 83 percent), while the Bureau of Land Management (BLM), the USFWS, the Washington Department of Natural Resources, and the WDFW manage other areas (Entiat Subbasin Plan 2004). Slightly less than 9 percent of the subbasin is in private ownership. Annual precipitation in the subbasin can range from nearly 90 inches near the Cascade crest to less than 10 inches along the Columbia River. The Entiat River is the only water body in the Entiat Subbasin affected by the proposed action.

### **1.5.3 Methow Subbasin**

The Methow subbasin is located entirely within Okanogan County and is approximately 1,167,764 acres in size. The Methow River enters the Columbia River at river mile 524. More than 80 percent of the subbasin is managed by the USFS, while approximately 15 percent of the subbasin is in private ownership (Methow Subbasin Plan 2004). The BLM and the State of Washington manage small portions of the subbasin. The Methow subbasin includes part of the Pasayten and Lake Chelan-Sawtooth Wilderness areas. Annual precipitation in the subbasin can vary from as much as 80 inches near the Cascade crest to approximately 10 inches in drier parts of the subbasin (Methow Subbasin Plan 2004). Water bodies in the Methow subbasin affected by the proposed action include the Methow River, the Twisp River, and the Chewuch River.

### **1.5.4 Okanogan Subbasin**

The Okanogan subbasin is located in both the United States (Okanogan County) and Canada (British Columbia). The Okanogan River enters the Columbia River at river mile 533.5. Within the United States, the subbasin covers approximately 1.49 million acres (Okanogan Subbasin Plan 2004). Ownership within the subbasin is divided between public, private, and tribal ownership. Precipitation in the subbasin ranges from more than 40 inches in the mountain region to approximately 8 inches at the confluence of the Okanogan and Columbia Rivers (Okanogan Subbasin Plan 2004). Water bodies in the Okanogan subbasin affected by the proposed action include the Okanogan River and the Similkameen River.

## **1.6 Scope**

The scope of the action considered here includes only the recreational fisheries managed by WDFW that do not target, but may affect, listed anadromous fish species within the action area. The action specifically addresses the unlisted salmon, gamefish, and general season fisheries listed above in section 1.3 and described in the permit application from WDFW.

## 1.7 Relationship to Other Plans and Policies

The proposed action analyzed in this EA relates to other plans and policies regarding the management and restoration of anadromous fish resources in the Pacific Northwest. The discussion above, in sections 1.1 and 1.2, describes the policy and decision foundation of the project.

The proposed action is consistent with on-going ESA recovery planning. Recovery plans have been or are being developed in most sub-basins in the Columbia River system. These recovery plans will contain: (1) measurable goals for delisting, (2) a list of the actions necessary to achieve delisting goals, and (3) an estimate of the cost and time required to carry out those actions. All factors that have been identified as leading to the decline of ESA-listed species will be addressed in these recovery plans. For ESA-listed salmon and steelhead, these factors include hydroelectric operations, habitat degradation, historic harvest, and artificial propagation<sup>2</sup> (UCSRB 2007). The Upper Columbia Salmon Recovery Board (UCSRB) is responsible for recovery planning efforts in the UCR basin. The UCSRB comprises a representative from each of the three counties, Chelan, Douglas, and Okanogan, and two affected tribal entities, the Yakama Nation and Colville Confederated Tribes. The majority of the funding for the UCSRB's efforts has been provided by the state of Washington.

Other Federal, state, and tribal plans and policies that would potentially address effects on fish populations apply within or near the action area. Federal actions include USFS and BLM land and resource management plans that are designed to foster sustainable ecosystems and resilient watersheds. State initiatives include legislative measures to facilitate the recovery of listed species and their habitats, as well as the overall health of watersheds and ecosystems. State land management, environmental quality, and agriculture agencies all have policies and plans that address water quality and land use practices that are designed to achieve desirable water quality and resource conditions, some specific to protected species, some more generally addressing water and resource quality. Regional programs are being developed that designate priority watersheds and facilitate development of watershed management plans. The Columbia River Treaty Tribes have developed a joint restoration plan for anadromous fish in the Columbia River basin, known as the *Wy-Kan-Ush-Mi Wa-Kish-Wit* or Spirit of the Salmon Plan (CRITFC 1995).

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<sup>2</sup> In this document, the terms "artificially propagated" and "hatchery" are used interchangeably, as are the terms "naturally produced" and "natural."

## **2 ALTERNATIVES**

The proposed action and one alternative considered in this EA are: (1) to not issue the permit (No Action) and (2) to issue the permit with conditions (Proposed Action). The following sections describe the alternatives.

### **2.1 Alternative 1 – Do Not Issue the Permit (No Action)**

Under the No Action alternative, NMFS would not issue an ESA section 10(a)(1)(B) permit authorizing take of ESA-listed species incidental to the otherwise lawful fisheries. This would effectively prohibit the WDFW from implementing the proposed fisheries described in the permit application.

### **2.2 Alternative 2 – Issue Permit with Conditions (Proposed Action)**

The Proposed Action is to issue permit number 1554 under section 10(a)(1)(B) of the ESA based on the application submitted by the WDFW, as modified by the conditions that NMFS may require as being necessary and appropriate. NMFS' conditions would ensure that the incidental take of ESA-listed anadromous fish would not appreciably reduce the likelihood of the survival and recovery of the species in the wild.

Brief descriptions of the proposed fishery, including the dates and specific locations of the fisheries, are found in the following subsections (2.2.1 through 2.2.10). Additional details can be found in the WDFW's permit application (WDFW 2005).

#### **2.2.1 Methow Basin Catch-and-Release Trout Fishery**

The WDFW proposes to open catch-and-release fisheries for rainbow, cutthroat, and brook trout in sections of the Methow River and several of its tributaries. Specifically, the Methow River starting at the County Road 1535 (Burma Road) bridge upstream to the Weeman Bridge would be opened from June 1 to August 15; from the County Road 1535 (Burma Road) bridge upstream to Foghorn Dam would be opened from August 16 to September 30. The Chewuch River from the mouth upstream to Eight Mile Creek and the Twisp River from the mouth to War Creek would be opened from June 1 to August 15. The fishery would be regulated as a "selective gear fishery." This would require using unscented, artificial flies or lures with a barbless single hook and no bait. The fishery would be monitored using a randomized creel census throughout the proposed fishery locations and dates. Angler effort is estimated to be approximately 9,000 hours for this fishery.

#### **2.2.2 Summer/Fall Chinook Salmon Fishery Above Priest Rapids Dam**

The WDFW proposes to open a summer/fall Chinook salmon fishery in the Columbia River upstream of Priest Rapids Dam using a staggered opening date schedule. The staggered opening date strategy is designed to provide increased angling opportunities for summer Chinook salmon while maintaining protection of ESA-listed anadromous species. While the primary target of this fishery would be non-listed summer-run Chinook salmon, the retention of other non-listed salmon species such as coho and

sockeye salmon may be allowed following analysis of run sizes and impacts on listed species. The WDFW intends to consult with affected tribal co-managers regarding fisheries directed at coho salmon. The Columbia River from Priest Rapids Dam to Rocky Reach Dam would be opened from June 24 to October 15, the Columbia River from Rocky Reach Dam to Wells Dam, including the lower section of the Entiat River from the Entiat River confluence with the Columbia River upstream to the Entiat City Limits which would be open from August 1 through August 31. The area from Wells Dam to Chief Joseph Dam, including the Methow River downstream of the Hwy 97 Bridge at Pateros would be opened from July 8 to October 15. The Okanogan River upstream of the Hwy 97 Bridge at Brewster to ¼ mile below the railroad trestle near Zosel Dam would be opened from July 8 to September 15 and the Similkameen River from the confluence with the Okanogan River upstream to the city bridge at Oroville would be opened from July 8 to September 15. The WDFW would utilize a creel census to provide in-season assessments of the fishery. Angler effort is estimated to be approximately 62,000 to 77,000 angler hours for this fishery.

### **2.2.3 Icicle Creek Spring Chinook Salmon Fishery**

The WDFW proposes to open a fishery targeting spring Chinook salmon in Icicle Creek that are returning to Leavenworth NFH. In-season run abundance of hatchery and natural-origin fish would be used to determine if the fishery should be opened; if allowed, seasons, limits, and gear restrictions would be announced in late April and the fishery would be opened from mid-May through July. Angling would be allowed from 400 feet upstream of the mouth of Icicle Creek upstream to 500 feet downstream of the Leavenworth NFH rack. Night closure and non buoyant lure restrictions would be in effect for this fishery. The WDFW would assess the impact of the fishery through creel monitoring and evaluation. Angler effort is estimated to be approximately 13,000 to 30,000 angler hours for this fishery, based on previous year's efforts.

### **2.2.4 Entiat River Spring Chinook Salmon**

The WDFW proposes to open a fishery targeting Carson-stock spring Chinook salmon returning to the Entiat National Fish Hatchery. In-season run abundance of hatchery and natural-origin fish would determine if the fishery should be opened; this determination would usually be made in April. If opened, the fishery would occur in the Entiat River from mid-May through July. Angling would be allowed from the Alternate Highway 97 Bridge near the mouth of the Entiat River, upstream approximately 6.8 miles to 500 feet downstream of the Entiat NFH fish ladder. The fishery would be regulated as a selective fishery and require the use of barbless hooks and non-buoyant lure restrictions; in addition, night closure would be in effect for the fishery. The WDFW would assess encounters of natural-origin spring Chinook and steelhead through creel surveys. Angler effort is estimated to be approximately 6,000 to 15,000 angler hours for this fishery.

### **2.2.5 Lake Wenatchee Sockeye Salmon Fishery**

The WDFW proposes to open a fishery for sockeye salmon in Lake Wenatchee. The WDFW would consider opening the fishery if the projected sockeye escapement is at



least 3,000 more than an escapement goal of 23,000 natural spawners. If the fishery was opened, an announcement would be made in late July. The fishery would occur in late July or early August and last from 10 to 30 days. Selective gear rules, including the use of barbless hooks and no bait, would be in effect. Extensive monitoring of the fishery would occur and allow the season to be quickly closed by emergency regulation once the allowable sockeye harvest was taken. The WDFW estimates that the maximum angler effort would be approximately 20,087 angler hours for this fishery.

#### **2.2.6 Hanford Reach Summer Chinook Salmon Fishery**

The WDFW proposes to open a fishery targeting summer Chinook salmon in the mainstem Columbia River from McNary Dam to Priest Rapids Dam. This fishery would only be implemented when summer Chinook salmon returns were sufficient to meet escapement goals for upper Columbia River summer Chinook salmon set by WDFW and other co-managing entities. If implemented, the fishery would occur from June 16 to August 15. Most of the effort would likely be concentrated in the Hanford Reach during the first two weeks of the season. Although the primary target of this fishery would be non-listed summer Chinook salmon, retention of other non-listed salmon species such as coho and sockeye salmon may be allowed following analysis of run sizes and impacts to listed species. The WDFW intends to consult with affected tribal co-managers regarding fisheries directed at coho salmon. Due to the expected low impact on listed fish, the WDFW would not conduct monitoring throughout the entire duration of this fishery. However, the WDFW would conduct creel surveys (angler interviews and angler effort counts) to assess ESA-listed steelhead encountered during this fishery from August 1 to August 15. Angler effort is estimated to be approximately 5,100 angler hours for this fishery, based on previous year's fisheries.

#### **2.2.7 Hanford Reach Fall Chinook Salmon Fishery**

The WDFW proposes to open a fishery targeting fall Chinook salmon in the mainstem Columbia River. As described in the application, the fishery would occur from August 1 to December 31 in the Columbia River from McNary Dam to the "old Hanford town site wooden power line towers" and from August 16 to October 22 from the "old Hanford town site wooden power line towers" to Priest Rapids Dam. Most of the effort would likely be concentrated in the Hanford Reach area. Although the primary target of this fishery would be non-listed fall Chinook salmon, retention of other non-listed salmon species such as coho and sockeye salmon may be allowed following analysis of run sizes and impacts on listed species. The WDFW intends to consult with affected tribal co-managers regarding fisheries directed at coho salmon. Monitoring efforts would include angler interviews, creel surveys, and sport fishery modeling. Angler effort is estimated to be approximately 20,000 angler hours for this fishery, based on previous year's efforts.

#### **2.2.8 Non-anadromous Recreational Fishery Below Priest Rapids Dam**

The WDFW proposes to maintain open fisheries in the Hanford Reach area of the Columbia River for white sturgeon, walleye, whitefish, bass, and northern pikeminnow. The fisheries would be open year-round from the Highway 395 Bridge at

Pasco/Kennewick to Priest Rapids Dam, except for a closure to all fishing from October 23 to January 31 from the Old Hanford town site to Vernita Bridge, in order to protect unlisted fall Chinook salmon spawning in the area. The WDFW application states that the only monitoring that would occur on this fishery would be opportunistic angler surveys (i.e., the WDFW does not anticipate implementing a statistically valid monitoring program for these fisheries). Angler effort is estimated to be approximately 3,000 angler hours for this fishery, based on previous year's efforts.

### **2.2.9 Non-anadromous Recreational Fishery Above Priest Rapids Dam**

The WDFW proposes to open recreational fisheries targeting warmwater species, walleye, and sturgeon in the Columbia River from Priest Rapids Dam to Chief Joseph Dam and in portions of the Okanogan River. Smallmouth bass, largemouth bass, and warmwater sport fisheries would be open year round in the mainstem Columbia River and in the Okanogan River below Malott Bridge and from June 1 to August 31 in the Okanogan River from Malott Bridge to ¼ mile below the railroad trestle near Zosel Dam. The walleye sport fishery would be open year round in the Columbia River and in the Okanogan River below Malott Bridge and from June 1 to August 31 from the Malott Bridge to ¼ mile below the railroad trestle near Zosel Dam. The sturgeon sport fishery would be open year round in the mainstem Columbia River; with angling generally occurring in the vicinity of dam tailraces and in deep-water reservoir habitats. The WDFW would limit monitoring to opportunistic angler interviews. Angler effort is estimated to be approximately 500 to 600 angler days for the bass and warmwater sport fisheries, approximately 300 to 400 angler days for the walleye fishery, and approximately 100 angler days for the sturgeon fishery, based on previous year's efforts.

### **2.2.10 Tributary Whitefish Fishery**

The WDFW proposes to open a whitefish fishery in specific areas of the Wenatchee, Entiat, Methow, and Okanogan River basins. The fisheries would be opened from December 1 to March 31. Angling would occur in the following streams: the Chewuch River from the mouth to the Pasayten Natural Wilderness boundary, the Methow River from Gold Creek to the falls above Brush Creek, the Similkameen River from the mouth to the Canadian border, including the anadromous fish zone from the mouth of the Similkameen River to Enloe Dam, the Entiat River from the mouth (Highway 97 bridge) to Entiat Falls, and the Wenatchee River from the mouth to the Highway 2 Bridge at Leavenworth. The WDFW would monitor the fisheries with opportunistic angler interviews and enforcement contacts sufficient to deter anglers from targeting steelhead. Angler effort is estimated to be approximately 1,000 angler hours for this fishery, based on previous year's efforts.

### **2.2.11 Permit Number 1554 Terms and Conditions**

NMFS proposes to issue section 10(a)(1)(B) permit number 1554 to the WDFW with terms and conditions. Generally, the conditions are designed to minimize ESA-listed fish mortalities and adverse impacts during recreational fisheries in the UCR basin. Specifically, permit conditions would require that the WDFW:

- Manage their fisheries within the limits and following the descriptions in the Section 10 permit application (WDFW 2005).
- Sufficiently monitor the catch in all fisheries to provided estimates of listed fish encounters (i.e., incidental take).
- Monitor the catch-and-release fisheries to assess overall mortalities for these fisheries.
- Provide in season reports to NMFS that summarize the catch, effort, monitoring, and enforcement relative to each fishery. The frequency of in season reports would vary based on level of take anticipated in the fishery.
- Submit a comprehensive annual report on all ten fisheries by April 15 of the next year.

### **2.2.12 Incidental Take**

The expected level of incidental take of listed UCR spring Chinook salmon, UCR steelhead, MCR steelhead, and Snake River fall Chinook salmon under the Proposed Action is included below in Table 1. In brief, the take of just over 12,500 juvenile UCR steelhead would be permitted, nearly all of them during trout fisheries – approximately 1,250 would die as a result. The take of just under 2,000 adult UCR steelhead would be permitted, mostly during fisheries targeting unlisted fall Chinook salmon – fewer than 200 would likely die as a result, the vast majority of which would be hatchery-origin fish. The incidental catch-and-release of 25 adult and five juvenile MCR steelhead would result in the mortality of about five adults and one juvenile MCR steelhead. Up to eight SR fall Chinook salmon would be killed. Incidental take of listed spring Chinook salmon would vary depending on the run size of natural-origin and hatchery-origin spring Chinook salmon. The Entiat NFH spring Chinook salmon fishery would be managed under a sliding scale that would allow greater impacts on listed fish as run sizes increased. Therefore the range of incidental take would be from zero, in low run years, up to 500, in very high run years, with mortality of ten percent of the total take. Very few fish of other salmonid species would be taken. The design of the fisheries and the methods used to estimate take and mortality are described in the following sections of this assessment.

Table 1. Projected take of ESA listed species during recreational fisheries in the UCR basin (WDFW 2005).

Fishery	Upper Columbia River Spring Chinook Salmon		Upper Columbia River Steelhead		Snake River fall Chinook Salmon		Middle Columbia River Steelhead	
Type of Take	Adult	Juvenile	Adult	Juvenile	Adult	Juvenile	Adult	Juvenile
<b>1) Methow River Catch &amp; Release Trout Fishery</b>								
Catch, handle, and release	0	81	20	12,500 <sup>1</sup>	0	0	0	0
Lethal Take	0	8	2	1,250 <sup>1</sup>	0	0	0	0
<b>2) Columbia River Mainstem Chinook Salmon Fishery above Priest Rapids Dam</b>								
Catch, handle, and release	0	0	100	0	0	0	0	0
Lethal Take	0	0	10	0	0	0	0	0
<b>3) Icicle Creek Spring Chinook Salmon Fishery</b>								
Catch, handle, and release	0	0	10	0	0	0	0	0
Lethal Take	3	0	1	0	0	0	0	0
<b>4) Entiat River Spring Chinook Salmon Fishery<sup>2</sup></b>								
Catch, handle, and release	0-500+	0	10	0	0	0	0	0
Lethal Take	0-50+	0	1	0	0	0	0	0
<b>5) Lake Wenatchee Sockeye Salmon Fishery</b>								
Catch, handle, and release	6	0	0	0	0	0	0	0
Lethal Take	1	0	0	0	0	0	0	0
<b>6) Hanford Reach Summer Chinook Salmon Fishery</b>								
Catch, handle, and release	0	0	162 <sup>3</sup>	0	0	0	10	0
Lethal Take	0	0	16 <sup>3</sup>	0	0	0	2	0
<b>7) Hanford Reach Fall Chinook Salmon Fishery</b>								
Catch, handle, and release	0	0	1,500 <sup>4</sup>	0	0	0	10	0
Lethal Take	0	0	150 <sup>4</sup>	0	8	0	2	0
<b>8) Non-Anadromous Recreational Fishery Below Priest Rapids Dam</b>								
Catch, handle, and release	0	0	5	5	0	0	5	5
Lethal Take	0	0	1	1	0	0	1	1
<b>9) Non-Anadromous Recreational Fishery Above Priest Rapids Dam</b>								
Catch, handle, and release	2	0	4	0	0	0	0	0
Lethal Take	0	0	1	0	0	0	0	0
<b>10) Whitefish Fishery</b>								

<b>Fishery</b>	<b>Upper Columbia River Spring Chinook Salmon</b>		<b>Upper Columbia River Steelhead</b>		<b>Snake River fall Chinook Salmon</b>		<b>Middle Columbia River Steelhead</b>	
<b>Type of Take</b>	<b>Adult</b>	<b>Juvenile</b>	<b>Adult</b>	<b>Juvenile</b>	<b>Adult</b>	<b>Juvenile</b>	<b>Adult</b>	<b>Juvenile</b>
Catch, handle, and release	0	0	40	0	0	0	0	0
Lethal Take	0	0	2	0	0	0	0	0
<b>Total Take - Catch, handle, and release</b>	<b>8-500+</b>	<b>81</b>	<b>1,851</b>	<b>12,505</b>	<b>0</b>	<b>0</b>	<b>25</b>	<b>5</b>
<b>Total Lethal Take</b>	<b>4-50+</b>	<b>8</b>	<b>184</b>	<b>1,251</b>	<b>8</b>	<b>0</b>	<b>5</b>	<b>1</b>

<sup>1</sup> Take estimate includes anadromous and resident *O. mykiss* because of inability to distinguish the two forms at this life stage

<sup>2</sup> Encounter and mortality based on run-size and sliding scale harvest mortality.

<sup>3</sup> An estimated 127 of the 162 steelhead encountered and 13 of the 16 mortalities may be upriver-bound fish. The remainder are likely steelhead returning to the Ringold Springs Rearing Facility.

<sup>4</sup> Based on origin of steelhead occupying the fishery area, approximately 70% of the 1,500 steelhead encountered (1,055 fish) and 70% of the mortality (106 fish) are likely upriver-bound steelhead. The remaining encounter and mortality are likely steelhead returning to the Ringold Springs Rearing Facility.

### **2.3 Alternatives Considered, But Not Analyzed in Detail**

NMFS considered the alternative of issuing the section 10(a)(1)(B) permit to the WDFW with no additional restrictions or conditions beyond those specified in the regulations. In this case, because an incidental take permit would be issued, this alternative would result in WDFW's implementation of the fisheries to be in legal compliance with the ESA, but the real effect of the fisheries on the likelihood of survival and recovery of the listed species would only be as certain as the appropriateness of the fishery management actions applied in any given season. Furthermore, the ability to evaluate the fisheries' effects would only be as good as the monitoring and evaluation that would take place and, without specific conditions, the affirmative aspect resulting from Federal authorization would not be present; monitoring would likely still occur, but would not be as certain.

NMFS did not consider this alternative in detail because, while NMFS considers it most likely that the WDFW would continue to implement its fisheries in a conservative manner, and would monitor its fishery effects as funding allows, not imposing conditions in permits could potentially result in unexpected impacts on listed salmonids if impact minimization strategies are substantially altered by the WDFW or monitoring and compliance efforts are reduced, making any analysis of this alternative imprecise at best.

## **3 AFFECTED ENVIRONMENT**

This section presents information on the relevant environmental resources that would be affected by the alternatives if implemented. These resources include habitat features such as riparian areas and water quality, fish and wildlife resources, socioeconomic features, and sensitive segments of society. The analysis of potential effects is presented in later sections.

### **3.1 Riparian Habitat**

The proposed fishing activities would take place on the mainstem Columbia River or on specific water bodies in the Wenatchee, Entiat, Okanogan, and Methow subbasins. Riparian habitat conditions vary from pristine to extremely degraded in all of these subbasins. In degraded areas, streams have been channelized and banks have been riprapped, floodplain connectivity has been decreased by development, roads, and flood control structures, and riparian areas have been impacted by land management activities, including timber harvest, livestock grazing, fire suppression, residential development, urbanization, and agricultural use. Many, if not all, of the rivers and streams where the angling activities would occur have established fishing access points and/or developed boat launches.

### **3.2 Water Quality**

The following water bodies, which are each wholly or in part locations for the Proposed Action, were included on the Washington Department of Ecology's (Ecology) 2004 303(d) list: Columbia River, Icicle Creek, Wenatchee River, Okanogan River,

Similkameen River, Chewuch River, Methow River, and Entiat River. The Columbia River was listed for temperature, toxics, and PCBs; Icicle Creek was placed on the 303(d) listed for dissolved oxygen, pH, and temperature; the Wenatchee River was listed for dissolved oxygen, pH, temperature, toxics, and PCBs; the Okanogan River was listed for temperature, pH, dissolved oxygen, and toxics; the Similkameen River was listed for temperature; the Chewuch River was listed for temperature; the Methow River was listed for temperature; and the Entiat River was listed for pH (Ecology 2004).

Water quality may be impaired by sedimentation from past road building, mining, grazing, and recreational activities, as well as municipal and industrial discharge. Water quality may also be influenced by the presence of salmonid carcasses in the water, as a result of dying after spawning, or dying during unsuccessful upstream migration that add carbon and nitrogen to the system (Gresh et al. 2000). Nutrients from the marine environment are transported by migrating salmon and steelhead from the ocean to freshwater environments (Cederholm et al. 1999). These nutrients, such as carbon and nitrogen, are then released in the freshwater environment by decomposing carcasses and are recycled into plant and animal matter and subsequently support future generations of ESA-listed anadromous fish by providing them habitat (woody debris, tree cover, riparian habitat) and food (insects). The marine origin of these nutrients is important, as freshwater streams in the Pacific Northwest are oligotrophic (low in available nutrients); the importation of marine-derived nutrients by adult salmon returning from the ocean to freshwater is key in providing nutrients for freshwater aquatic communities.

### **3.3 ESA-Listed Anadromous Fish Species**

Anadromous fish species that may be affected by the Proposed Action include endangered UCR spring Chinook salmon and UCR steelhead, and threatened Snake River fall Chinook salmon and MCR steelhead. This section provides a summary of the listed species and their status in the Action Area.

#### **3.3.1 Upper Columbia River Spring Chinook Salmon**

The UCR spring Chinook salmon ESU was listed as endangered on March 24, 1999 (64 FR 14308) and reaffirmed as endangered on June 28, 2005 (70 FR 37160). This ESU includes stream-type spring Chinook salmon populations originating from all areas of the Columbia River basin upstream of Rock Island Dam (Myers et al. 1998). Production areas include the Wenatchee, Methow, and Entiat River basins. The Washington Department of Fisheries (WDF) identified nine stocks within this ESU (WDF et al. 1993). All stocks, with the exception of the Methow stock, were considered to be of native origin, of "wild" production type, and as "depressed" in status (WDF et al. 1993). The Methow River spring Chinook salmon stock is considered to be "composite" in production type, but of native origin, and depressed in status. When listing the UCR spring Chinook salmon as endangered, NMFS included six spawning aggregates which have been artificially propagated in recent years as part of the ESU. NMFS' Interior Columbia Basin Technical Recovery Team (ICBTRT) identified three extant populations of the Upper Columbia River Spring Chinook Salmon ESU – the Methow River, the

Entiat River, and the Wenatchee River populations. The ICBTRT classified the Okanogan River spring Chinook salmon population as extirpated (ICTRT 2007a-c).

Upper Columbia River spring Chinook salmon begin entering the Columbia River in late February and early March, with approximately 50 percent passing Priest Rapids Dam by mid-May. Fish enter the Methow River from mid-May through July and primarily use the upper mainstem reaches of the Methow, Chewuch, Lost, and Twisp Rivers. Spawning occurs from late July through mid-September; fry emerge from the gravel in April and May. Juveniles spend the next year in fresh water prior to migrating downstream in the spring. Spring Chinook salmon returning to the Wenatchee and Entiat Rivers have similar run timing with spawning starting about the second week of August and peaking in the first week of September. Spawning time is dependent on water temperature and generally begins when water temperatures are between 42.4°F and 57.5°F (Mullen 1987 in WDW et al. 1990a). Fry emerge from the gravel in January to February and rear in freshwater for up to a year prior to outmigrating during the following spring.

Although escapements increased in 2000 and 2001 in the Wenatchee, Entiat, and Methow River Basins as compared to levels from the mid-1990's, trends in natural returns remain negative for spring/summer Chinook salmon populations in these basins. Short-term trends (1990-2001) for natural returns decreased at average rates of 3 percent (Entiat), 10 percent (Methow), and 16 percent (Wenatchee) (Good et al. 2005).

From 1960 to 2003, the abundance of age 3+ spring Chinook salmon in the Wenatchee subbasin ranged from 51 to 6,718 fish, in the Entiat subbasin abundance ranged from 18 to 1,197 fish, and in the Methow subbasin abundance ranged from 33 to 9,904 fish (UCSRB 2007). During this period the 12-year geometric mean of spawners in the Wenatchee population ranged from 383 to 3,449 adults, in the Entiat population ranged from 90 to 490 adults, and in the Methow population ranged from 480 to 2,231 adults (UCSRB 2007). The ICBTRT current status assessments provide information on the current natural-origin 12-year geometric mean of adult abundance for each population, with 80 natural-origin adults for the Entiat population and 220 adults for each of the Wenatchee and Methow populations, with an overall ESU abundance of 520 natural-origin adults. The status assessments also state that the Entiat, Wenatchee, and Methow populations are not currently viable and are all at a high risk of extinction (ICTRT 2007a-c).

The key limiting factors and threats for the UCR spring Chinook include hydropower projects, predation, harvest, hatchery effects, degraded estuary habitat, and degraded tributary habitat. Ocean conditions have also affected the status of this ESU and generally have been poor for this ESU over the last 20 years, improving only in the last few years (NMFS 2008).

### **3.3.2 Upper Columbia Steelhead**

The UCR steelhead DPS was listed as endangered on August 18, 1997 (62 FR 43937) and subsequently re-listed as threatened on January 5, 2006 (71 FR 834). As already



mentioned, on June 13, 2007, the Hatchery Listing Policy was set aside as contrary to the ESA by the U.S. District Court, and the DPS listing reverted to endangered status (68 FR 55900). The decision by the court did not address the biological status or viability of the DPS, but instead was based on the validity of the NMFS Hatchery Listing Policy (*Trout Unlimited v. Lohn*). The following description of the DPS is unaffected by, and remains consistent with, the Court's recent decision.

The ICBTRT identified that the UCR steelhead DPS was composed of four anadromous *O. mykiss* extant populations: the Entiat River, Methow River, Okanogan River, and Wenatchee River, and one extirpated population the Crab Creek population (ICTRT 2006a; 2007d-g). Resident *O. mykiss* were not included in the DPS determination. This DPS inhabits the Columbia River and tributaries upstream of the Yakima River. It includes rivers mostly draining the east slope of the Cascade Mountains. This area includes several rivers that originate in Canada, but it is not thought that steelhead ever occurred in Canada in large numbers; this DPS is defined to include only U.S. populations. This entire DPS has been heavily influenced by artificial propagation programs, with a thorough mixing of stocks as a result of the Grand Coulee Fish Maintenance Project beginning in the 1940s (Fish and Hanavan 1948; Mullan et al. 1992). Until recently, hatchery releases were composed of a composite of basin stocks. The Wells stock is included in the listing because it might retain the genetic resources of the original steelhead populations above Grand Coulee Dam (62 FR 43937) and may be used for recovery purposes. Currently, efforts are underway to develop artificial propagation programs from locally-adapted stocks, incorporating natural-origin steelhead into the broodstock. Steelhead juveniles released into the Wenatchee River have been progeny of broodstock collected from the Wenatchee River exclusively since the 1998 brood (WDFW 2002). Hatchery-reared steelhead from Wells stock, Wenatchee River stock, and the Colville Tribes' Omak Creek program are all part of the listed DPS.

The life history of this DPS is similar to other inland steelhead DPSs. However, smolt ages in this DPS are some of the oldest on the west coast (up to 7 years old), likely as a result of the ubiquitous cold water temperatures (Mullan et al. 1992). Adults of this DPS spawn later than most downstream populations. Adults primarily return after one year of ocean residency. Steelhead from this DPS enter the lower Columbia River between May and September, with fish arriving at Wells Pool in early July. Fish enter the Wenatchee and Methow Rivers in mid-July and peak between mid-September and October. During winter, fish generally return to the warmer Columbia River and re-enter the Methow to begin spawning in mid-March after ice-out. Spawning continues through May and many fish seek out higher reaches in the tributaries. Fry emergence occurs that summer and juveniles most frequently rear for two to four years prior to spring downstream migration.

Although runs during the period 1933 through 1959 may have already been affected by fisheries in the lower river, dam counts suggest a pre-fishery run size of more than 5,000 adults above Rock Island Dam. The average number of steelhead (hatchery and natural-origin) returning to Priest Rapids Dam was 14,860 from 1998-2003 (WDFW 2005). Of those, approximately 2,687 were natural-origin (WDFW 2005).

Between 1967 and 2003, escapement of naturally produced steelhead in the Wenatchee subbasin ranged from 70 to 2,864 fish and the 12-year geometric mean ranged from 185 to 1,400 adults (UCSRB 2007; ICTRT 2006a and ICTRT 2007d-f). In the Entiat subbasin, escapement ranged from 9 to 366 fish (1967-2003) and the geometric mean ranged from 24 to 118 adults, in the Methow subbasin escapement ranged from 1 to 587 adults (1967-2002) and the geometric mean ranged from 36 to 242 adults, and in the Okanogan subbasin escapement ranged from 1 to 156 fish (1967-2002) and the geometric mean ranged from 11 to 64 adults (UCSRB 2007). The current ICBTRT 12 year geometric mean for abundance and productivity are approximately 900 adults returning to the Wenatchee, 100 adults to the Entiat, 300 to the Methow, 100 to the Okanogan and approximately 1,400 returning adults for the ESU as a whole. The ICBTRT current status assessments state that the Entiat, Wenatchee, Okanogan and Methow populations are not currently viable and are all at a high risk of extinction (ICTRT 2006a and 2007d-f).

Artificially propagated UCR steelhead of the Wells stock are reared and released from WDFW's Ringold Springs Hatchery. This facility is located in the Middle Columbia River between McNary and Priest Rapids Dams above the confluence of the Snake and Columbia Rivers. The UCR steelhead released from Ringold Springs Hatchery are from the earliest spawners in the Wells stock steelhead broodstock. Past hatchery practices encouraged early maturation of steelhead in the Wells Hatchery program. This practice has been identified as potentially contributing to the domestication of the Wells stock of steelhead. The transfer of the earliest spawned eggs is one change in hatchery practices intended to correct deleterious hatchery practices. Although, the steelhead released from Ringold Springs Hatchery are part of the DPS, they would be the least desirable fish for recovery of the natural population because of their early maturation tendency. These steelhead are adipose fin clipped to allow for their identification as hatchery reared fish and are available for harvest as surplus to recovery needs under ESA permit number 1395 (NMFS 2003).

The key limiting factors and threats for the UCR steelhead include hydropower projects, predation, harvest, hatchery effects, degraded tributary habitat, and degraded estuary habitat. Ocean conditions that have also affected the status of this DPS generally have been poor over the last 20 years, improving only in the last few years (NMFS 2008).

### **3.3.3 Snake River Fall Chinook Salmon**

The proposed Hanford Reach fall fishery could affect Snake River fall Chinook salmon that stray into the Hanford Reach area briefly prior to migrating up the Snake River. The Snake River fall Chinook salmon ESU was listed as threatened on April 22, 1992 (57 FR 14653) and reaffirmed as threatened on June 28, 2005 (70 FR 37160). This Chinook salmon ESU includes all natural populations of fall-run Chinook salmon in the mainstem Snake River and the following sub-basins: Tucannon River, Grande Ronde River, Imnaha River, Salmon River, and Clearwater River. This ESU also includes four artificial propagation programs: the Lyons Ferry hatchery, Fall Chinook acclimation ponds, Nez Perce Tribal hatchery, and Oxbow hatchery populations.

Chinook salmon that cross Bonneville Dam after August 1 are considered fall run Chinook salmon. They arrive in Idaho in September and October. Spawning occurs from October through November. In the Snake River, habitat utilized by fall Chinook salmon for spawning and early juvenile rearing is different from that utilized by spring-run and summer-run fish. The latter two forms spawn and rear in high elevation sections of the Salmon River and other tributary streams, whereas fall Chinook salmon use mainstem areas of the Snake River and the low elevation parts of major tributaries. Spring/summer Chinook salmon are described as having the “stream type” life history, which includes entering fresh water in an early stage of reproductive maturity and typically includes a yearling age smolt. Fall Chinook salmon typically enter freshwater in an advanced stage of maturity and produce subyearling smolts (Myers et al. 1998).

The 2001 count of Snake River fall Chinook over Lower Granite Dam, which covers the majority of fall Chinook returning to the Snake River Basin, exceeded 8,700 adult fish. Escapements from 1997 through 2001 were the highest on record since the count of 1,000 in 1975 (Good et al. 2005). Returns of naturally produced Chinook salmon and increased hatchery returns from the Lyons Ferry Hatchery account for the increase in escapements over Lower Granite Dam (Good et al. 2005). Returns classified as natural-origin exceeded 2,600 adult fish in 2001. The 1997–2001 geometric mean for natural-origin escapements over Lower Granite Dam was 871 fish; this is approximately 35 percent of the delisting abundance criteria proposed for this run (2,500 natural-origin spawners averaged over an 8-year period) (Good et al. 2005). The ICBTRT current status assessments state that the Snake River Fall Chinook salmon population is not currently viable and is at a moderate risk of extinction (ICBTRT 2006b).

S Snake River fall Chinook salmon begin arriving at McNary Dam in early August with the peak passage in mid-September and passage tapering down through mid-October. The 10-year average 50 percent passage date of Snake River fall Chinook salmon at Ice Harbor Dam was September 16 and 85 percent of the run is above Ice Harbor Dam by October 1.

Historically, the primary fall-run Chinook salmon spawning areas were located on the upper mainstem Snake River (Good et al. 2005). However, the construction of a series of Snake River mainstem dams inundated spawning and rearing habitat and prevented access to the species’ primary production areas when fish passage facilities at the dams proved to be inadequate. Past over-harvest in fisheries and some previous hatchery practices also have contributed to the species’ decline. To these factors are added poor ocean conditions prior to 2000 that have suppressed fish survival, and vastly increased avian predation in the Columbia River estuary. These latter factors affect all of the basin’s salmon and steelhead populations.

### **3.3.4 Middle Columbia River Steelhead**

Middle Columbia River steelhead were listed as a threatened species on March 25, 1999 (64 FR 14517); threatened status reaffirmed on January 5, 2006 (71 FR 834). The DPS includes all naturally spawned anadromous *O. mykiss* (steelhead) populations below natural and manmade impassable barriers in streams from above the Wind River,

Washington, and the Hood River, Oregon (exclusive), upstream to, and including, the Yakima River, Washington, excluding *O. mykiss* from the Snake River Basin, as well seven artificial propagation programs. This fishery only has the potential to impact the Major Population Group known as the Yakima River Group.

Life history information for steelhead of this ESU indicates that most Middle Columbia River steelhead smolt at two years and spend one or two years in salt water (i.e., 1-ocean and 2-ocean fish, respectively) prior to re-entering fresh water, where they may remain up to a year prior to spawning (Howell et al. 1985). Within this ESU, the Klickitat River is unusual in that it produces both summer and winter steelhead, and the summer steelhead are dominated by 2-ocean steelhead, whereas most other rivers in this region produce about equal numbers of both 1- and 2-ocean steelhead. Major drainages in this ESU are the Deschutes, John Day, Umatilla, Walla-Walla, Yakima, and Klickitat River systems. Almost all steelhead populations within this ESU are summer-run fish, the exceptions being winter-run components returning to the Klickitat, and Fifteen Mile Creek watersheds.

Critical habitat for the Middle Columbia River steelhead DPS was designated on March 15, 1999 (57 FR 14517), but was subsequently vacated by the May 2002 court order (68 FR 55900, September 29, 2003).

The abundance of natural-origin populations in the Middle Columbia River steelhead DPS has increased substantially over the past 5 years. The natural-origin populations in the Yakima River, however, remain well below their recovery target abundance levels (ICTRT 2007h-k). The ICTRT 2007 current status assessments identify that the 12-year geometric means for natural-origin adult abundance for Yakima River Group populations are 400 for the Satus Creek population, 300 for the Toppenish River population, 500 for the Naches River, 100 for the Upper Yakima River population, and 1,400 adults for the MPG as a whole. Long-term trends for 11 of the 12 production areas in the DPS were negative, although it was observed that these downward trends are driven, at least in part, by a peak in returns in the middle to late 1980s, followed by relatively low escapement levels in the early 1990s (BRT 2003).

The BRT noted the particular difficulty in evaluating the contribution of resident fish to DPS-level extinction risk. Several sources indicate that resident fish are very common in the DPS and may greatly outnumber anadromous fish. The BRT concluded that the relatively abundant and widely distributed resident fish in the DPS reduce risks to overall DPS abundance, but provide an uncertain contribution to DPS productivity, spatial structure, and diversity (BRT 2003).

### **3.4 Other ESA-Listed Fish Species**

One other ESA-listed fish species that could be present in the area affected by the Proposed Action is the Columbia River population segment of bull trout. Bull trout in the Columbia River basin were listed as threatened on June 10, 1998 (63 FR 31647). The Columbia River population segment encompasses a vast geographic area, including portions of Idaho, Montana, Oregon, Washington, and British Columbia. Bull trout are

present, and locally common, in most of the habitat occupied by anadromous fish in the UCR basin. At the time of the listing, 10 of the 16 subpopulations in the UCR basin were considered at risk of extirpation because of naturally occurring events due to isolation, single life-history form and spawning area, and low abundance (63 FR 31647). The WDFW (1997) identified 17 bull trout stocks in the Methow River watershed; most are located in the headwater tributaries. The status of these stocks was listed as unknown except for the Lost River stock which was considered healthy (WDFW 1997). In the Wenatchee River, the WDFW (1997) identified 11 bull trout stocks located in the headwater tributaries; out of these 11 stocks, 4 stocks were identified as being healthy and the remaining seven as unknown.

Bull trout populations are known to exhibit four distinct life history forms: resident, fluvial, adfluvial, and anadromous. Resident bull trout spend their entire life cycle in the same (or nearby) streams in which they hatched. Fluvial and adfluvial populations spawn in tributary streams in which the young rear from 1 to 4 years before migrating to either a lake (adfluvial) system or a river (fluvial) system, where they grow to maturity. Anadromous fish spawn in tributary streams, with major growth and maturation occurring in salt water.

Bull trout spawn from August to November as the water temperatures begin to decline. Juveniles remain in the substrate for some time after hatching. Depending on water temperature, the fry emerge in 100 to 145 days. Bull trout populations are fragmented; within one drainage, many individual populations may be isolated from one another. The distribution of this species appears to be greatly influenced by habitat components such as water temperature (bull trout prefer colder streams), cover, channel form and stability, substrates, and migratory corridors (WDW et al. 1990b). Bull trout have complex life stage habitat needs. Bull trout utilize large woody debris, undercut banks, boulders, and pools. Altered stream flow can disrupt spawning, while channel stability is a large factor in egg survival. It is believed that migratory bull trout occasionally spawn outside of their own natal area; this may help maintain genetic stability over time.

Similar to anadromous fish species, bull trout benefit from marine derived nutrients that are transported by migrating salmon and steelhead from the ocean to freshwater environments. These nutrients, such as carbon and nitrogen, are then released in the freshwater environment by decomposing carcasses and are recycled into plant and animal matter and subsequently support future generations of ESA-listed bull trout by providing them habitat (woody debris, tree cover, riparian habitat) and food (insects).

### **3.5 Non-listed Fish Species**

Approximately 60 other species of fish live in the Columbia River and tributaries. Of these, about half are native species, primarily of the families *Salmonidae*, *Catostomidae*, *Cyprinidae*, and *Cottidae*. In addition to the ESA-listed fish species previously mentioned, rainbow trout, cutthroat trout, brook trout, whitefish, white sturgeon, walleye, bass, northern pikeminnow, sockeye, coho and Chinook salmon inhabit water bodies in the area affected by the Proposed Action.

Similar to ESA-listed species, non-listed native fish species benefit from marine-derived nutrients. These nutrients, such as carbon and nitrogen, are then released in the freshwater environment by decomposing carcasses and are recycled into plant and animal matter and subsequently support future generations of fish by providing them habitat (woody debris, tree cover, riparian habitat) and food (insects).

Some of the proposed fisheries target non-native or exotic species such as bass, walleye, and brook trout. Some of these exotic species prey on or compete with ESA-listed and unlisted juvenile salmonids. NMFS generally supports aggressive retention fisheries that control non-natives and reduce impacts on native Pacific Salmon.

Largemouth bass are native to North America: St. Lawrence - Great Lakes, Hudson Bay (Red River), and Mississippi River basins; Atlantic drainages from North Carolina to Florida and to northern Mexico. The species has been introduced widely as a game fish and is now ubiquitous. Several countries report adverse ecological impact after introduction ([www.fishbase.org/Summary/SpeciesSummary.php?id=3385](http://www.fishbase.org/Summary/SpeciesSummary.php?id=3385)). The largemouth bass's diet changes as it matures. As juveniles, they eat mostly small food items such as plankton and insects. Their diet changes as they grow to include fish, crayfish, and frogs as adults. Wydoski and Whitney (1979) reported that in the Columbia River salmonids make up 14 percent of the diet of largemouth bass over 4 inches in length.

Walleye are not native to Washington State, and it is not known how they originally entered the state. The first verification of a walleye in Washington was in 1962, from Banks Lake in eastern Washington. Soon afterwards, populations began to show up in Franklin Roosevelt Lake (connected to Banks Lake through a huge pipe and pump). Since then they have spread from these original sites to the remainder of the mainstem Columbia River, from near the mouth to the Canadian border ([www.wdfw.wa.gov/outreach/fishing/walleye/walleye1.htm](http://www.wdfw.wa.gov/outreach/fishing/walleye/walleye1.htm)).

Walleye continued to advance to other waters in the central Columbia Basin. Using irrigation canals as frontier highways, they have established populations in Moses Lake, Potholes Reservoir, Billy Clapp Lake, Long Lake, Crescent Lake and Soda Lake. The WDFW has also stocked walleye in some of these lakes to supplement the populations, as well as to create a new fishery in Sprague Lake.

Brook trout, smallmouth bass, and northern pikeminnow are all also known to be predators and competitors with juvenile salmon (Wydowski and Whitney 1979).

### **3.6 Terrestrial Organisms**

Wildlife that inhabit and utilize riparian areas include birds, terrestrial mammals, amphibians, and reptiles. In the upper reaches of the Wenatchee, Entiat, Methow, and Okanogan Rivers, and in the tributaries of these rivers, faster flowing, small streams bordered by riparian forest are present. These upper reaches provide habitat for a variety of riparian forest and stream associated wildlife, such as American dippers (*Cinclus mexicanus*), Steller's jays (*Cyanocitta stelleri*), ruby-crowned kinglets (*Regulus*

*calendula*), and tailed frogs (*Ascaphus truei*). Bald eagles (*Haliaeetus leucocephalus*) use these watersheds during winter and early spring months. The tributaries of the Wenatchee, Entiat, Methow, and Okanogan Rivers extend into remote areas where species such as bobcats (*Lynx rufus*) and mountain lions (*Felis concolor*) are expected to be more common than in developed areas. These species may feed minimally during limited times of the year on juvenile salmonids after release or on decomposing carcasses of spawned adult salmonids.

### 3.7 Socioeconomic Environment

Salmon are culturally, economically, and symbolically important to the Pacific Northwest. Historically, natural resources have been the mainstay of the economies of the Native Americans in the Columbia Basin. Salmon were an important aspect of the cultural life and subsistence of the Indian tribes that occupied the Columbia Basin. Hunting, fishing, and gathering have been important to tribes for thousands of years. These activities continue to be important today, both economically and for subsistence and ceremonial purposes.

Portions of nine Washington counties are found within the UCR Basin. Basic demographic information for the counties is in Table. The three Washington counties most likely to be affected by the Proposed Action are Chelan, Douglas, and Okanogan. All three counties are predominately white; however, all three counties have substantial Hispanic populations. While Chelan and Douglas Counties have relatively small Native American populations (1.1 percent and 1.3 percent, respectively), 11.2 percent of Okanogan County's population is Native American (2005 U.S. Census Bureau data at [quickfacts.census.gov](http://quickfacts.census.gov), accessed December 2006).

**Table 2. Demographic Information regarding counties in the action area (2005 U.S. Census Bureau data ([quickfacts.census.gov](http://quickfacts.census.gov), accessed December 2006))**

County	Population (2005)	Percent Hispanic Origin (%)	Percent Native American (%)
Adams	16,803	50.9	1.2
Benton	157,950	14.6	1.0
Chelan	69,791	20.9	1.1
Douglas	34,977	22.2	1.3
Franklin	63,011	48.3	0.8
Grant	81,229	33.8	1.4
Kittitas	36,841	5.7	1.1
Okanogan	39,782	14.3	11.1
Yakima	231,586	39.3	5.0

Due to the location where the proposed fisheries would occur, it is likely that Chelan, Douglas, and Okanogan Counties would be more directly affected than other counties in the UCR Basin. The median income in these three counties is substantially lower than the median income for the state. The 2003 median income in Chelan County was \$38,455, Douglas County's was \$39,469, and Okanogan County's was \$30,339; the statewide median income was \$48,185 (U.S. Census Bureau [quickfacts.census.gov](http://quickfacts.census.gov)). In

addition to lower median incomes, all three counties also had a higher percentage of people below poverty than the state as a whole. The statewide average of people below poverty was 11 percent, whereas in Chelan County it was 12.6 percent, in Douglas County it was 11.9 percent, and in Okanogan County it was 18.7 percent (U.S. Census Bureau [quickfacts.census.gov](http://quickfacts.census.gov)).

Agriculture, forestry, fishing, and hunting make up the largest employment sector in all three counties. This sector accounts for 23 percent of the employment in Chelan County, 29 percent in Douglas County, and 29 percent in Okanogan County (WOFM [www.ofm.wa.gov](http://www.ofm.wa.gov)).

According to 2001 survey results, 938,000 anglers (residents and nonresidents) participated in angling activities in Washington (USDI et al. 2003). These anglers spent a total of \$854 million on fishing related expenditures in Washington. While this figure is for Washington State in its entirety, as opposed to only the area affected by the Proposed Action, it is clear that expenditures related to fishing are important to the state. In recent years, with salmonid numbers severely reduced due primarily to habitat degradation and hydropower development in the mainstem river, commercial and recreational fisheries have been considerably curtailed from earlier levels. Given this reduction in fisheries, any remaining income generated from the remaining fisheries is important to the state. Much of this income related to recreational fisheries is generated by tourists. Many people enjoy fishing activities as weekend hobbies or as a primary vacation activity.

Federal policy includes the directive to promote compatibility, and to reduce conflict, between administration of the ESA and recreational fisheries (61 FR 27978). If the analysis that will be performed during section 7 consultation demonstrates that the proposed fisheries are not expected to have a meaningful adverse impact on ESA-listed fish returning to the Upper Columbia River basin, then the fisheries activities should be approved.

### **3.8 Environmental Justice**

Executive Order 12898 (59 FR 7629) states that Federal agencies shall identify and address, as appropriate "...disproportionately high and adverse human health or environmental effects of [their] programs, policies and activities on minority populations and low-income populations...." While there are many economic, social, and cultural elements that influence the viability and location of such populations and their communities, the development, implementation and enforcement of environmental laws, regulations and policies can also have impacts. Therefore, Federal agencies, including NMFS, must ensure fair treatment, equal protection, and meaningful involvement for minority populations and low-income populations as they develop and apply the laws under their jurisdiction.

In the action area, there are minority and low income populations that this Executive Order could apply to, including Hispanics and Native American Indian tribes. As previously discussed, Chelan, Douglas, and Okanogan Counties all have minority



populations. In addition, all three counties have lower median incomes and higher percentages of people below poverty than the state as a whole.

Survey results demonstrate that the majority of Washington anglers are white (94 percent) and of non-Hispanic descent (98 percent) (USDI et al. 2003). While the amount of angling activities by minority groups was not shown, it is likely that all ethnic groups engage in recreational fishing.

#### **4 ENVIRONMENTAL CONSEQUENCES**

The following section presents the technical analysis of the probable consequences of each alternative. This section will discuss resources in the same sequence as they were discussed in section 3 above.

##### **4.1 Alternative 1 – Do Not Issue the Permit (No Action)**

Under this alternative, no permit for the take of listed UCR spring Chinook salmon, UCR steelhead, Snake River fall Chinook salmon and MCR steelhead would be issued. It would not be possible for WDFW to implement the proposed sport and recreational fisheries by completely avoiding take of listed species, so the implementation of the fisheries would result in the unauthorized take of ESA-listed anadromous fish species. Because the proposed fisheries could not proceed without violating the ESA, it is assumed, for analyses purposes, that the No Action alternative would effectively prohibit recreational fishing in waters where listed fish might occur.

##### **4.1.1 Effects on Riparian Habitat**

Under the No Action alternative, no additional adverse or beneficial impacts of any magnitude on either pristine or degraded riparian habitat would be expected to occur. Recreational fisheries often involve fishing from boats, which are launched from established boat ramps at designated water access points where the riparian habitat has already been compromised. Anglers also use established walking paths or wildlife trails to access rivers and creeks. In some areas anglers may create new trails or disturb intact riparian habitat.

Under the No Action alternative recreational fishing might be restricted, and the riparian habitat may be less impacted by anglers accessing rivers and streams. However, other recreational activities such as wildlife watching, rafting and boating, and camping would continue, as would all other land use activities that have affected riparian habitat in the action area, including channelization, urbanization, grazing, and other agricultural activities. Although restricting fishing opportunities may slightly reduce the use of riparian areas, this reduction would not result in the improvement of riparian habitat. The status of the habitat conditions would not change under this alternative.

##### **4.1.2 Effects on Water Quality**

The No Action alternative would not be expected to result in either positive or adverse impacts on water quality. By not allowing the proposed fisheries to occur, the number of

boats on the water may be reduced. Also, the amount of use of stream-side areas may be reduced as well. These reductions may reduce the adverse effects of the release of boat engine byproducts, trash, sediment, and other effluents into the water. However, because fishing efforts have been limited in recent years as a result of constrained fisheries, and adverse effects on water quality from fishery activities are relatively small and localized, the benefits to water quality resulting from the large-scale closure of fisheries would be expected to be negligible.

No improvements in listed 303(d) streams would occur as a result of closing fisheries, because the fisheries themselves have little adverse effect on water quality factors such as temperature and dissolved oxygen. More substantial impacts from activities other than fishing would continue under the No Action alternative, including road sedimentation, mining, grazing, and other forms of public recreation.

Most of the fish that would be caught and retained in the proposed fisheries would be either hatchery-origin fish that would be expected to return to hatcheries or non-listed natural fish from populations that are robust. The number of additional fish that would reach spawning areas under the No Action alternative would not be expected to substantially affect the environment, either adversely (due to temporary and localized appearances of compromised water quality) or beneficially (by providing marine-derived nutrients to the ecosystem from carcasses) because the fisheries would occur on runs of fish that are at self-sustaining healthy levels and hatchery fish would primarily return to hatcheries rather than natural areas.

#### **4.1.3 Effects on ESA-Listed Anadromous Fish Species**

Under the No Action alternative, recreational fisheries that might directly impact listed salmon and steelhead would not be permitted, therefore any potential incidental takes of ESA listed fish would not occur. This could result in very small numerical changes in abundance of listed fish in the locations and the times when the fisheries would occur. The majority of the ESA-listed fish expected to be impacted are from the UCR steelhead DPS in the Hanford Reach fishery. Essentially, the number of fish described as allowable lethal take in Table 1 would instead be available to pass upstream; most of these fish would likely survive to natural spawning areas, thereby providing additional potential spawners. The viability and recovery of these species will be evaluated based on natural origin spawner abundance, productivity spatial structure and diversity of the listed species. Therefore, not allowing the fisheries could result in increases in some viability attributes of listed fish in some areas, but such increases would not be expected to provide substantial benefits to any listed population; UCR spring Chinook salmon, UCR steelhead, Snake River fall Chinook salmon, and MCR steelhead would continue to remain at non-viable levels. However, failure to remove surplus hatchery-origin fish that are not included in the ESU/DPS and to remove non-native predatory fish would act as a further detriment to the viability of the species.

Recreational fisheries are managed to minimize risk (i.e., minimize take of listed fish) to listed species while providing for the economic, cultural, and social benefits inherent with sustainable recreational fisheries. The No Action alternative would not meet the goal of

providing economic, cultural, and societal benefits that are inherent with sustainable recreational fisheries.

Under the No Action alternative the few UCR spring Chinook salmon from natural populations or the artificial propagation programs that could be impacted during recreational fisheries activities would not be impacted.

The factors for decline, including historic hatchery practices, harvest, hydro electric dam operation, agriculture would not change under the No Action alternative.

The Wells stock steelhead released above Wells Dam and the natural populations of steelhead in the UCR steelhead DPS would not be subject to any catch and release handling or mortality, therefore, their importance as a key genetic resource for recovery would not be effected. The capture and release of juvenile steelhead in the Methow River that would be caught and released in the Methow River Trout Fishery would not occur. The abundance of listed juvenile steelhead of natural origin would increase.

The estimates of spawner escapement and/or stray rates of hatchery-origin fish from any of the ESA listed species encountered would not change under the No Action alternative because no take of these fish would be authorized. The abundance of MCR steelhead populations that have increased in recent years would not be impacted by fisheries under the No Action alternative.

Under the No Action alternative, a small number of ESA listed fish would not be captured, handed, and released, or incidentally killed in the proposed recreational fisheries because the fisheries would not occur. Hence, there would be no measurable impact, positive or negative, to the abundance or any life history characteristic of any of the four ESA-listed species that could be affected during the proposed recreational fisheries activities.

#### **4.1.4 Effects on Other ESA-Listed Fish Species**

Under the No Action alternative, the other ESA-listed fish species, threatened bull trout, would not be subjected to catch-and-release handling that may occur in the action area. Bull trout populations would remain at unknown or declining levels, including subpopulations at risk of extirpation in the Upper Columbia River. The potential capture and release of bull trout from implementing recreational fisheries for whitefish or Lake Wenatchee sockeye on the four healthy subpopulations of bull trout in the Wenatchee basin would not occur. In addition, the chance of bull trout being disturbed during spawning and rearing would be decreased from under this alternative.

Several of the species that would be targeted during the proposed fisheries compete with or prey on bull trout and other endemic species. Removal of these invasive or introduced species could result in a small, likely unmeasurable, reduction in competition or predation on bull trout. Under the No Action alternative, even these small potential benefits would not occur.

The distribution or life history of ESA-listed bull trout would not be affected by the No Action alternative.

#### **4.1.5 Effects on Non-listed Fish Species**

Under the No Action alternative, non-listed resident fish species would not be subject to harvest in recreational fisheries. Non-listed Pacific Salmon hatchery-origin fish targeted in these fisheries are produced from production hatcheries developed for compensation for hydro system impacts and therefore are intended to be harvested; under the no action alternative, these hatchery programs would not be able to serve their authorized purpose. There is a potential risk to listed and native species by suspending the recreational harvest of certain exotic species that have been introduced into the action area.

Brook trout would continue to be present and would continue to exert some amount of competitive pressure upon indigenous species and listed salmonids. Any benefits to listed species from the pikeminnow sport-reward program would end and pikeminnow populations would likely increase. This may impose increased predation pressure on juvenile salmon and steelhead.

Nonnative fishes can be introduced when used as live bait. Sources of non-native organisms would be somewhat reduced by termination of fishery activities, though other recreational and agricultural activities also contribute to the spread of non-native wildlife and plant species.

Salmon carcasses provide a source of marine nutrients to the ecosystem as a whole. The No Action alternative may result in a slight increase in the amount of marine nutrients returning to the Upper Columbia area since anadromous fish would not be targeted under this alternative. Thus, non-listed fish species could potentially benefit from increased nutrients from carcasses. However, for the same reasons mentioned above for effects on ESA-listed species, any increase in the amount of marine nutrients from the selection of the No Action alternative is expected to be negligible.

Non-listed species native to the action area could be impacted if the proposed fisheries are authorized if they are the species targeting in the specific fishery. In general, the species targeted in the fisheries are from healthy populations that would not be negatively impacted by the removal of some fish or the incidental mortality (in the case of catch-and-release fisheries) of some fish from the populations. Under the No Action alternative the removal or incidental killing of fish from these healthy non-listed species would not occur.

Introduced or invasive species would be targeted during some of the proposed fisheries. Removal of these non-native species could provide some small benefits by reducing competition or predation on native species, including prey upon listed salmonids. Under the No Action alternative such benefits would not occur.

Other fish that would be caught are not native to Washington State. These fish include walleye, brook trout, and bass. Because these fish prey on or compete with ESA-listed

salmon and steelhead, removing them from the action area could provide some benefit to the listed species. The life histories of native or introduced fish would not be affected under the No Action alternative.

#### **4.1.6 Effects on Terrestrial Organisms**

Selection of the No Action alternative would lead to reductions in the number of boaters and fishermen and their disturbance of terrestrial organisms. However, other forms of outdoor recreation would continue and other land uses that affect terrestrial organisms would continue. The current status of terrestrial organism populations would not be expected to change under the No Action alternative.

Terrestrial organisms that rely on fish or carcasses as a primary food source would not be affected by the No Action alternative. Although this alternative would potentially result in more fish being available as a food source, it is unlikely that this would positively affect terrestrial organisms. This is because any increase, as a result of not implementing fisheries similar to those in recent years, in the number of fish or carcasses available as a food source, is expected to be minor and would not have a noticeable impact on any terrestrial species.

Most of the proposed fisheries would occur in the mainstem Columbia River and the lower reaches of its tributaries upstream of Priest Rapids Dam. Activities in these areas would not impact terrestrial organisms that inhabit the upper tributary areas. The few proposed fisheries that could occur in the upper tributary areas are limited in location and duration. These activities could potential cause terrestrial organisms, such as birds or bears to temporarily move away from anglers, but would not cause any long-term or permanent disturbance or impact. Under the No Action alternative, no fisheries activities would take place, therefore no impacts, even the temporary disturbance of terrestrial organisms, would not occur.

#### **4.1.7 Effects on Socioeconomic Environment**

Selection of the No Action alternative would leave the proposed recreational fisheries without authorization for incidental take of listed species, effectively prohibiting the conduct of the proposed fisheries. Loss of recreational fishing would negatively impact the state's economy. Selection of the No Action alternative would result in less money being spent on fishing licenses and fishing services in the affected area. The loss of recreational fishing would have adverse impacts on retail and recreation industries, including sporting goods retailers, food and lodging providers, and fishing guide services.

As discussed in Section 3.7, it is estimated that anglers spent \$854 million on fishing related expenditures in Washington in 2001. The income generated from fisheries is not only large, but it is likely distributed throughout rural areas and may provide employment in small communities. Given that fishing generates a large amount of income for the state, and that the populations in the action area have lower median incomes and higher levels of poverty than statewide residents as a whole, the No Action alternative would likely have even increased negative effects on the residents of Chelan, Douglas, and

Okanogan Counties. It is not clear how much these county residents depend on recreational fishing for economic incomes, or how much of this economic input would be replaced by shifts to other activities, but it is likely that most of the fishing revenue that would have been generated in these counties would be lost if the recreational fisheries could not occur as proposed.

In addition to the economic effects of recreational fishing, there are important social and cultural values to Washington residents, as well as to tourists who may travel to Washington specifically to fish for recreational purposes and to enjoy other related outdoor recreation. Selection of the No Action alternative would adversely affect these social and cultural values.

Selection of the No Action alternative would also be contrary to Federal policy direction to promote compatibility, and to reduce conflict, between administration of the ESA and recreational fisheries (61 FR 27978). If the analysis that will be performed during section 7 consultation demonstrates that the proposed fisheries are not expected to have a large adverse impact on ESA-listed fish returning to the Upper Columbia River basin, selection of the No Action alternative would not be necessary or advisable. The No Action alternative would result in limiting access to harvestable surpluses of hatchery-produced salmon and healthy natural populations of native and non-native fish species. The No Action alternative would deny the validity of programs and techniques that have been developed to increase fishing opportunities.

The combined effect of the No Action alternative with the current reduced opportunities for recreational fisheries would be a loss of cultural value, economic opportunity, and would be contrary to Federal policy.

#### **4.1.8 Effects on Environmental Justice**

As describe above in section 3.7, salmon are culturally, economically, and symbolically important to the Pacific Northwest and the mainstay of the economies of the Native Americans in the Columbia Basin. Although Tribal members could participate in these general fisheries, the proposed permit 1554 would authorize recreational fishing for non-Tribal anglers. Under the No Action alternative, the recreational fisheries would not occur for non-Tribal or Tribal anglers.

Selection of the No Action alternative may disproportionately affect low income populations in Chelan, Douglas, and Okanogan Counties. Since these counties' residents have median incomes lower than the state average, and because a greater percentage of the residents live below poverty than in other counties statewide, decreasing fishing opportunities may lead to even lower incomes in these areas. Residents who rely on the income generated from fisheries may experience worse economic conditions under this alternative. It is not anticipated that the No Action alternative would disproportionately affect minority anglers compared to white anglers.

## **4.2 Alternative 2 – Issue Permit with Conditions (Proposed Action)**

The Proposed Action is to issue permit number 1554 under section 10(a)(1)(B) of the ESA based on the application submitted by WDFW, as modified by the conditions that NMFS may require as being necessary and appropriate. NMFS' conditions would ensure that the incidental take of ESA-listed anadromous fish would not appreciably reduce the likelihood of the survival and recovery of the species in the wild. The fisheries covered by permit number 1554 were described in sections 2.2.1 – 2.2.10, above.

### **4.2.1 Effects on Riparian Habitat**

The effects on pristine and degraded riparian habitat in the action area resulting from issuing a permit that allows recreational fishing in the Upper Columbia River and its tributaries would occur as a result of anglers walking along stream banks to access rivers and streams, launching and retrieving watercraft, and camping near streams. Fishers may deposit litter next to streams in the course of fishing and camping activity, and items such as monofilament fishing line may be a hazard for wildlife. However, any increase in litter as a result of the Proposed Action is not likely to be measurable, given other activities such as camping and hiking that already take place in the same area, and would not substantially impair habitat. The Proposed Action could result in disturbed vegetation. If vegetation is repeatedly disturbed, it may be slow to recover.

Many of the impacts on riparian areas related to angling activity are subject to state or Federal regulations that serve to ameliorate those impacts. For example, littering is regulated by state law. Access areas and campgrounds have been developed by state and Federal agencies; these serve to concentrate the impacts of all water based recreation at a limited number of sites. Under the Proposed Action, there would be more adverse impacts on riparian habitat than under the No Action alternative, primarily in terms of increased traffic and litter. However, because other activities already take place in the same areas, and the areas are largely developed to serve those activities, the additional impacts resulting from the Proposed Action are not likely to have much discernible effect on the habitat's condition.

Much of the access to water bodies affected by the Proposed Action is at developed access areas, boat ramps, or adjacent to highways, where riparian impacts have already occurred. Many other outdoor recreation activities also occur in riparian areas, including boating, camping, and wildlife watching. Recreational fishing would add more adverse impacts to the effects of these other activities. As under the No Action alternative, facilities used in association with river fisheries such as boat ramps, campgrounds, and access roads are essentially all in place, and new construction is not anticipated. Compared to other land uses, such as roads, urban encroachment, flood control, and agriculture, fishing access is a small adverse impact on riparian areas.

### **4.2.2 Effects on Water Quality**

Under the Proposed Action, adverse effects on water quality would be slightly higher than under the No Action alternative. Water quality could temporarily be adversely

affected by the activities of anglers camping along streams or launching and operating boats. These activities could result in very small and localized occurrences of sediment being disturbed in streams or in effluent from boats being discharged into the water. Some additional litter and trash is likely to be deposited in streams by anglers. Water quality effects are expected to be small, temporary, and localized.

The long-term adverse effects on water quality resulting from the Proposed Action are expected to be negligible. Because of this, the Proposed Action is not expected to increase the likelihood that streams will be listed under section 303(d). Like the No Action alternative, the Proposed Action alternative would not result in changes to such sources of water quality impairment as road building, grazing, recreational activities, or municipal and industrial discharge.

Because the fisheries would target species and stocks that are healthy or are from hatchery programs or exotic species that are not intended to spawn naturally and contribute nutrients to the system, the fish that would be taken in the fisheries would not be expected to measurably, if at all, affect nutrients in streams in a manner different from the No Action alternative.

#### **4.2.3 Effects on ESA-Listed Anadromous Fish Species**

If permit 1554 is issued, then recreational fisheries that might impact listed salmon and steelhead would be permitted, and some ESA-listed fish would be captured, handled, and released during fisheries for non-listed species. An estimated five to ten percent of the ESA-listed fish that are captured would be expected to die as a result of being captured, handled, and released (see Table 1). These fisheries are designed to remove surplus hatchery-origin fish that are not included in the ESU/DPS and to remove non-native predatory fish, which are actions considered beneficial to the viability and recovery of the listed species. The Proposed Action is important to manage surplus hatchery-origin fish escapement to benefit listed species' diversity and productivity attributes and potential competition impacts. The Entiat NFH program has been identified as a major limiting factor for recovery and removing these fish benefits listed Chinook salmon. Although not a major limiting factor, the removal of other hatchery-origin fish like those taken in the Icicle Creek fishery is also a benefit to the listed species. The fisheries also remove non-native species, which directly impact listed species abundance through direct predation or competition for similar food resources. Therefore, compared to the No Action alternative, allowing the fisheries could benefit listed species viability and would not be expected to contribute to a further decrease in viability of any listed UCR spring Chinook salmon, UCR steelhead, Snake River fall Chinook salmon, or MCR steelhead population.

Recreational fisheries are managed to minimize risk (i.e., minimize the capture, handling, and release) to listed species while providing for the economic, cultural, and social benefits inherent with sustainable recreational fisheries targeting non-listed hatchery-origin or natural origin fish that are surplus and are intended for harvest. Compared to the No Action alternative, this alternative would meet the goal of providing economic, cultural, and societal benefits that are inherent in sustainable recreational fisheries.



The mortalities expected to result from the proposed fisheries can be found in section 2.2.14, Table 1. While the proposed activities are expected to result in a small level of take of ESA-listed fish in the form of capture, handle, and release, with five to ten percent of those fish being incidentally killed. For spring Chinook salmon, the estimated adult mortalities range from six to more than 50 dependent primarily on the number of natural origin spring Chinook salmon that return to the Entiat River. It is extremely unlikely that the Entiat population would recover to the level that incidental impacts of greater than 4 percent would be allowed during the time when this permit is in effect. Considering this with the context of the current returns to the basins from the ICTRT assessments and the sliding scale based on the natural run size results in a 0.01 to 2.8 percent reduction in abundance for the ESU as a whole (ICTRT 2007a-c).

The UCR steelhead incidental take estimate is 186 adult mortalities, of which only 106 would be bound for areas above Priest Rapids Dam and only about 20 of those would be naturally produced steelhead. This impact on the 12-year geometric mean translates to an estimated mortality of less than one percent of the naturally produced population. The majority of these fish would be taken in the mainstem Columbia River, mostly in the Hanford Reach area, so the mortality would accrue to the run at large, without disproportionately affecting any single population.

An estimated eight Snake River fall Chinook salmon mortalities represents less than one percent of this ESU returning to the Snake River.

The estimated take of five adult MCR steelhead is less than one percent of the 12-year geometric mean of abundance for the Yakima River Group major population group. Finally, the numbers of juvenile salmonids expected to be killed as a result of the Proposed Action equates, for each species, to no more than a single returning adult.

The level of take is not expected to appreciably reduce the likelihood of the survival and recovery of the species in the wild. In addition, the terms and conditions that NMFS has included in permit number 1554 would serve to limit the take of ESA-listed species.

Since several of the fisheries target non-native or exotic species that prey on or compete with listed species, removing some of those exotic fish could result in benefits to listed species; such benefits are not quantifiable at this time.

Neither the negative impacts from the incidental take of listed fish nor the potential benefit to listed fish from removal of predatory or competitive species would be expected to result in impacts substantially different from those impacts under the No Action alternative.

Compared to the No Action alternative, a few UCR spring Chinook salmon from natural populations or the artificial propagation programs (see Table 1) could be impacted during recreational fisheries activities.

The factors for decline, including historic hatchery practices, harvest, hydroelectric dam operation, and agriculture, would not change if permit number 1554 was issued compared to the No Action alternative.

The Wells-stock steelhead released above Wells Dam and the natural populations of steelhead in the UCR steelhead DPS would be subject to catch and release handling or mortality. Compared to the No Action alternative, about 15 adult UCR steelhead from areas above Wells Dam would be killed (see Table 1). Considering the run composition in recent years, most of the fish impacted would be hatchery-origin fish that in most years are excess to recovery needs. Therefore, the effect on this genetic resource for recovery would be minimal compared to the No Action alternative. The capture and release of juvenile steelhead in the Methow River that would be caught and released in the Methow River Trout Fishery would not occur.

If permit number 1554 is issued, there would be no measurable impact, positive or negative, on any life history characteristic of any of the four ESA-listed species that could be affected during the proposed recreational fisheries activities. Compared to the No Action alternative, there would be no change in effect.

In total, because the fisheries would be implemented to minimize or avoid impacts on listed fish, the number of listed fish that would be impacted is small with the exception of UCR steelhead released from Ringold Springs Hatchery. The UCR steelhead are released from Ringold Spring Hatchery as part of a strategy to improve hatchery practices and the fitness of steelhead that spawn in the natural environment. These fish are intended to provide recreational harvest opportunity and would be used for recovery of UCR steelhead populations under only the most dire situations. Compared to the No Action alternative, in total, no substantial change in effect on ESA-listed anadromous fish species would be expected from issuance of permit number 1554.

#### **4.2.4 Effects on Other ESA-Listed Fish Species**

Adverse impacts on threatened bull trout as a result of the Proposed Action are expected to occur. The potential for adverse, short-term displacement or handling by anglers for bull trout could be increased a small, but not measurable, amount as compared to the No Action alternative.

The declining or unknown status of some bull trout populations would not be changed if permit number 1554 was issued. Additionally, no effects on spawning or rearing of bull trout would be expected if permit number 1554 was issued. Compared to the No Action alternative there would be no difference in status, spawning, rearing, or other life history characteristic.

Salmon carcasses provide a source of marine nutrients to the ecosystem as a whole. The Proposed Action may result in a slight, but not measurable, decrease in the amount of marine nutrients that return to the ecosystem as a result of salmon being targeted in some of the proposed fisheries. However, since most fish targeted would have been produced by hatcheries, specifically to provide angling opportunities, the impact would not be

expected to be substantially different from the No Action alternative. Potential benefits of this slight increase in marine nutrients from returning salmon would not be realized by bull trout and so the loss of these nutrients is not expected to have a noticeable effect on bull trout.

#### **4.2.5 Effects on Non-Listed Fish Species**

Compared to the No Action alternative, issuance of permit number 1554 for recreational fisheries is expected to have adverse impacts on non-listed fish. Under the Proposed Action alternative, non-listed resident fish species would be subject to harvest in recreational fisheries. Those species included in the descriptions of the proposed fisheries (Sections 2.2.1 to 2.2.10) would incur increased impacts. However, because the fisheries are managed specifically to take advantage of harvestable levels of these fish, the resident fish species as a whole would not be adversely affected. Populations would remain at sustainable levels.

Compared to the No Action alternative, some non-native fish species would be removed from the action area. There is a potential benefit to listed and native species from increasing the recreational harvest of certain exotic species that have been introduced into the action area. Many of these fish would be of the non-native, introduced species such as smallmouth bass, walleye, largemouth bass, or brook trout. Brook trout, bass, and native northern pikeminnow are known to be predators on, or competitors with, juvenile salmon. Retention of such species (i.e., removing them from the environment) would reduce the number of predators on and competitors with native fish species, and may have beneficial effects on the numbers of ESA-listed anadromous salmon. It is, in fact, reasonable to assume that fisheries managed to actually reduce the numbers of non-native species would increase the beneficial effect.

As described above, the benefits to the ecosystem from marine nutrients derived from returning salmon would be decreased due to some salmon being targeted under the Proposed Action. However, any minor decrease in marine nutrients is not expected to have a noticeable impact on any fish species in the affected area because most of the salmon harvested would have been from hatchery programs meant to provide angling opportunities or from healthy unlisted stocks of salmon.

#### **4.2.6 Effects on Terrestrial Organisms**

Compared to the No Action alternative, adverse impacts on terrestrial species from the Proposed Action are expected to be increased by a small degree. Issuing a permit that authorizes fishing activities is likely to have additional adverse impacts on the habitat of terrestrial organisms as compared to the No Action alternative. There is likely to be temporary and localized displacement of some terrestrial organisms by anglers during the pursuit of fishing opportunities covered by the proposed permit. Fishers may deposit litter next to streams in the course of fishing and camping activities, and some items such as monofilament fishing line may be a hazard for wildlife. Compared to the No Action alternative, there would be greater adverse impacts on terrestrial species, though not likely to an extent that would reduce the abundance or distribution of those species.

Terrestrial organisms that rely on fish or fish carcasses as a food source may incur a slightly reduced food base as a result of the Proposed Action, as some fish would be killed or retained in the course of the fisheries. However, the reduction in fish numbers is not expected to have a noticeable impact on any terrestrial organisms that rely on fish as a primary food source because most of the fish harvest would be either from hatchery programs intended for harvest, healthy stocks or exotic species. Salmon carcasses provide a source of marine nutrients to the ecosystem as a whole. The Proposed Action may result in a slight decrease in the amount of marine nutrients that return to the ecosystem as a result of salmon being targeted in some of the proposed fisheries. However, the loss of these nutrients is not expected to have any effect on the ecosystem compared to the No Action alternative.

The additional adverse impacts on terrestrial organisms from the Proposed Action are not expected to be measurable when compared to other human activities that take place in the area affected by the Proposed Action. Other land use activities, including agriculture, urbanization, and transportation impacts, are expected to have a greater effect on terrestrial organisms than the Proposed Action. In addition, other outdoor recreation activities would take place at the same time as the proposed fisheries, regardless of the issuance of permit number 1554.

Most of the proposed fisheries would occur in the mainstem Columbia River and the lower reaches of its tributaries. Activities in these areas would not impact terrestrial organisms that inhabit the upper tributary areas. The few proposed fisheries that could occur in the upper tributary areas are limited in location and duration. These activities could potentially cause terrestrial organisms, such as birds or bears to temporarily move away from anglers, but would not cause any long-term or permanent disturbance or impact. Compared to the No Action alternative, implementing the fisheries could result in temporary disturbance of terrestrial organisms.

#### **4.2.7 Effects on Socioeconomic Environment**

Compared to the No Action alternative, the impacts on social and economic resources from the Proposed Action are expected to be beneficial. As discussed in Section 3.7, fishing related expenditures in Washington were \$854 million in 2001. While this amount was for the entire state, it is clear that income generated from fisheries is important. Recreational fishing may provide substantial income and important employment opportunities in rural communities located in the Upper Columbia region. It is likely that residents from other parts of Washington, as well as out-of-state tourists, will visit the Upper Columbia region to participate in the proposed fisheries. A precise estimate of the economic benefit associated with issuing the proposed permit is not available, but the economic impacts would be positive. Because the proposed permit would address a small increase in recreational fisheries, as opposed to the current level, there is some likelihood that income and employment in local areas of Chelan, Douglas, and Okanogan Counties could also increase a small amount.

In addition to the economic effects of recreational fishing, there are important social and cultural values to Washington residents, as well as to tourists who may travel to Washington specifically to fish for recreational purposes and to enjoy other related outdoor recreation. Compared to the No Action alternative, issuance of permit number 1554 would address these social and cultural values because the issuance of permit number 1554 would authorize fisheries in Washington State for the local citizens and tourists.

Unlike the No Action alternative, issuance of permit number 1554 would be consistent with Federal policy direction to promote compatibility, and to reduce conflict, between administration of the ESA and recreational fisheries (61 FR 27978). If the analysis that would be performed during section 7 consultation demonstrates that the proposed fisheries are not expected to have a large adverse impact on ESA-listed fish returning to the Upper Columbia River basin, issuance of permit number 1554 would be appropriate under the ESA. Permit number 1554 would allow anglers access to harvestable surpluses of hatchery-produced salmon and healthy stocks of salmon and other game fish species, which would not occur under the No Action alternative, or would occur at reduced levels.

Compared to the No Action alternative, issuance of permit number 1554 would provide benefits of cultural value and economic opportunity, and would be consistent with Federal policy.

#### **4.2.8 Effects on Environmental Justice**

Compared to the No Action alternative, the Proposed Action alternative would be expected to be more responsive to the intent of Executive Order 12898, which directs Federal agencies to address any disproportionately adverse effects on minority or low-income populations. Low-income residents who rely on income generated from fisheries would have greater opportunities to generate income if permit number 1554 was issued compared to under the No Action alternative.

Under the Proposed Action alternative, increased fishing opportunities would result as compared to the No Action alternative. This may provide low-income or rural communities with increased income and employment opportunities. Fishing opportunities would be available to all population segments, and all groups could share equally in the social and cultural benefits of recreational fishing. Therefore, benefits would not be disproportionate among minority groups compared to white angler groups. It is not anticipated that the costs of obtaining a fishing license would disproportionately affect low income people. Compared to the No Action alternative, all societal groups could benefit from the issuance of permit number 1554.

Issuance of permit 1554 would not disproportionately affect low income populations in Chelan, Douglas, and Okanogan Counties. Residents who rely on the income generated from fisheries may experience improved economic conditions under this alternative. It is not anticipated that the No Action alternative would disproportionately affect minority residents compared to white residents.

### **4.3 Cumulative Effects**

Cumulative negative impacts from NMFS' proposed issuance of section 10(a)(1)(B) permit number 1554, including terms and conditions as described, would be minor if at all measurable. Incremental impacts on the environment are included in the discussion above. Monitoring and enforcement of fishery regulations would ensure that all activities are carried out in a manner that minimizes take of ESA-listed species and other environmental parameters.

Other Federal, state, and tribal actions are expected to occur within the action area that could increase natural fish populations in the UCR basin. Federal actions for salmon recovery in the Columbia basin currently underway include initiatives by the Northwest Power and Conservation Council, the Federal Caucus basin-wide recovery strategy, and others. A new suite of operations for the Federal Columbia River Power System is currently being evaluated. State initiatives include recently passed legislative measures to facilitate the recovery of listed species and their habitats, as well as the overall health of watersheds and ecosystems. These multi-jurisdictional recovery plans and efforts also include provisions to maintain or even increase recreational fishing opportunities in the middle and upper Columbia River basins as ESA-listed species recover. Tribes have developed a joint restoration plan for anadromous fish in the Columbia River basin, known as the *Wy-Kan-Ush-Mi Wa-Kish-Wit* or Spirit of the Salmon plan. The cumulative impacts of implementing recovery programs in the UCR basin in addition to the permit reviewed in the EA are expected to increase the production and survival of natural fish over time and preserve and increase fishing opportunities for Tribal and non-tribal anglers.

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National Marine Fisheries Service, Northwest Region.

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## 7 FINDING OF NO SIGNIFICANT IMPACT

### **Finding of No Significant Impact for Issuing Permit 1554 Under Section 10(a)(1)(B) of the Endangered Species Act for Recreational Fisheries for Unlisted Species in the Upper Columbia River and its Tributaries in Washington State**

#### **National Marine Fisheries Service**

##### **7.1 Responses to Criteria**

National Oceanic and Atmospheric Administration Administrative Order 216-6 (NAO 216-6) (May 20, 1999) contains criteria for determining the significance of the impacts of a proposed action. In addition, the Council on Environmental Quality regulations at 40 C.F.R. 1508.27 state that the significance of an action should be analyzed both in terms of “context” and “intensity.” Each criterion listed below is relevant in making a finding of no significant impact and has been considered individually, as well as in combination with the others. The significance of this action is analyzed based on the NAO 216-6 criteria and CEQ’s context and intensity criteria.

##### **1) Can the proposed action reasonably be expected to jeopardize the sustainability of any target species that may be affected by the action?**

*Response:* The proposed action targets healthy sustainable stocks of fish in the Columbia River basin. Fishing seasons and harvest bag limits are used to ensure the target species are sustained. Therefore, the proposed action is not expected to jeopardize the sustainability of any target species that may be affected by the action considered in this Environmental Assessment.

##### **2) Can the proposed action reasonably be expected to jeopardize the sustainability of any non-target species?**

*Response:* The proposed action is not expected to jeopardize the sustainability of any listed or non-listed species because it is specifically designed to minimize impacts on ESA-listed species, and the proposed fisheries would be carefully managed to avoid deleterious interactions with any non-target species.

##### **3) Can the proposed action reasonably be expected to cause substantial damage to the ocean and coastal habitats and/or essential fish habitat as defined under the Magnuson-Stevens Act and identified in FMPs?**

*Response:* The proposed action is not expected to cause substantial damage to the ocean and coastal habitats and/or essential fish habitat as defined under the Magnuson-Stevens Act and identified in FMPs because the action does not occur in or near the ocean or coastal area. Any degradation of water quality in the action area would be minor, if at all measurable.

**4) Can the proposed action be reasonably expected to have a substantial adverse impact on public health or safety?**

*Response:* The proposed action will not have a substantial adverse impact, or any impact, on public health or safety because fisheries do not affect water or air quality to any great extent, and potential safety issues related to human presence near streams or in boats solely affects the participants.

**5) Can the proposed action reasonably be expected to adversely affect endangered or threatened species, marine mammals, or critical habitat of these species?**

*Response:* The proposed action is expected to affect two endangered and two threatened species. However, the effect is expected to be at a very low level due to a low expectation of co-occurrence, and conditions in the permit that limit the impact level and provide for mechanisms to minimize adverse impacts on listed species, including fisheries carefully managed using the best available science and best management practices. There will be no adverse effects on marine mammals because the activities will not occur where marine mammals live. Effects on critical habitat for listed species, such as walking on vegetation, will be very minor and temporary, primarily where similar disturbance already occurs as a result of other activities.

**6) Can the proposed action be expected to have a substantial impact on biodiversity and/or ecosystem function within the affected area (e.g., benthic productivity, predator – prey relationships, etc.)?**

*Response:* The proposed action is not expected to have a substantial impact on biodiversity and/or ecosystem function within the affected area. Any affect on predator – prey relationships will benefit ESA-listed and other native species because some of the fish targeted in the recreational fisheries are non-native piscivorous fish species.

**7) Are significant social or economic impacts interrelated with natural or physical environmental effects?**

*Response:* Implementation of NMFS' decision would be expected to result in the following environmental, social, and economic effects:

- Minor effects on riparian and stream habitat from anglers walking along the stream and using boats.
- Fishery effects on ESA-listed salmon and steelhead in the Columbia Basin ESUs are expected, individually and cumulatively, to be below the level that would appreciably reduce the likelihood of survival and recovery of the listed ESUs, as specified within the permit application.
- Few, if any, effects on other aquatic and terrestrial species from fishing activities.
- Some economic and social benefits to the local human communities within the middle and upper Columbia River basin.

**8) Are the effects on the quality of the human environment likely to be highly controversial?**

*Response:* The effects on the quality of the human environment of issuing the permit for the proposed recreational fisheries are not likely to be highly controversial based on the public comments received on the draft EA and permit, which were positive and supportive. Further, the proposed action is similar to previously implemented recreational fisheries reviewed and permitted by NMFS, including fisheries in this same area, none of which have generated high levels of public controversy. Methods used to analyze impacts of this action on environmental resources have not been controversial, and best management practices are utilized in the proposed action to minimize effects.

**9) Can the proposed action reasonably be expected to result in substantial impacts to unique areas, such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers or ecologically critical areas?**

*Response:* The proposed action is not reasonably expected to result in substantial impacts on unique areas, such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas because the activities will not change or alter those areas. Minor impacts from foot traffic on riparian areas are expected to be localized and temporary, and will not be located in unique areas.

**10) Are the effects on the human environment likely to be highly uncertain or involve unique or unknown risks?**

*Response:* The effects on the human environment are not likely to be highly uncertain or involve unique or unknown risks because the proposed action is similar to previously implemented recreational fisheries reviewed and permitted by NMFS, including fisheries in this same area.

**11) Is the proposed action related to other actions with individually insignificant, but cumulatively significant, impacts?**

*Response:* This action is of limited context and intensity, with limited environmental effects, individually or cumulatively. Cumulative impacts were considered, but no significant cumulative impacts are expected from implementation of the proposed action.

**12) Is the proposed action likely to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources?**

*Response:* The proposed action is not likely to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or cause loss or destruction of significant scientific, cultural, or historical resources because of the limited scope of the action area, which does not overlap with

any historic properties or sites, and the proposed action is non-disruptive to land-based resources.

**13) Can the proposed action reasonably be expected to result in the introduction or spread of a nonindigenous species?**

*Response:* The proposed action will not result in the introduction or spread of a nonindigenous species because the action does not involve rearing, releasing, or moving such species. The proposed action will result in the reduction of nonindigenous species because some of the fisheries specifically target non-native species.

**14) Is the proposed action likely to establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration?**

*Response:* The implementation of the proposed action will not predetermine or preclude options for future consideration.

**15) Can the proposed action reasonably be expected to threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment?**

*Response:* The proposed action is not expected to threaten a violation of Federal, State, or local law, or requirements imposed for the protection of the environment because the proposed action was developed in the broader context of consultations involving Federal and State agencies charged with recovery planning and implementation of the ESA.

**16) Can the proposed action reasonably be expected to result in cumulative adverse effects that could have a substantial effect on the target species or non-target species?**

*Response:* The proposed action is not expected to result in cumulative adverse effects on the target species because the species being targeted are either propagated explicitly for fishery harvest, or are non-indigenous to the area, or would be carefully monitored so that the fisheries can be managed to avoid reductions in abundance, no matter what the source of such reductions. The proposed action is not expected to result in cumulative adverse effects on non-target listed species because the fisheries would be explicitly managed to limit take to a level considered necessary to avoid jeopardy of non-target listed species. Adverse effects on non-target non-listed species are expected to be small, if any, and so no cumulative effects would be expected.

## **7.2 List of EA and FONSI Reviewers**

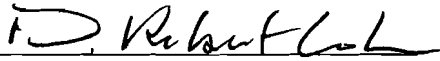
- Kathe Hawe, Northwest Regional NEPA Coordinator
- Office of Program Planning and Integration (NOAA NEPA)
- Robert Bayley, QA/QC Coordinator, Northwest Regional Office, Salmon Recovery Division

### 7.3 References

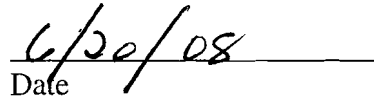
NMFS. 2008. Environmental Assessment of a NOAA's National Marine Fisheries Service Action To Issue Permit 1554 Under Section 10(a)(1)(B) of the Endangered Species Act for Recreational Fisheries on Unlisted Species in the Upper Columbia River and its Tributaries.

### 7.4 Determination

In view of the information presented in this document and the analysis contained in the supporting Environmental Assessment considering the action of issuing permit 1554 with specific conditions pursuant to section 10(a)(1)(B) of the ESA, it is hereby determined that the proposed Alternative will not significantly impact the quality of the human environment as described above and in the supporting Environmental Assessment. In addition, all beneficial and adverse impacts of the proposed action have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an EIS for this action is not necessary.



D. Robert Lohn  
Regional Administrator for Fisheries, Northwest Region  
National Oceanic and Atmospheric Administration

  
Date



bc: NWR1 - Rob Walton  
Rob Jones  
Kristine Petersen  
Robert Bayley  
Sharon Houghton (File copy - 8.1.1)  
NWR3 - Kathe Hawe

